

1/75

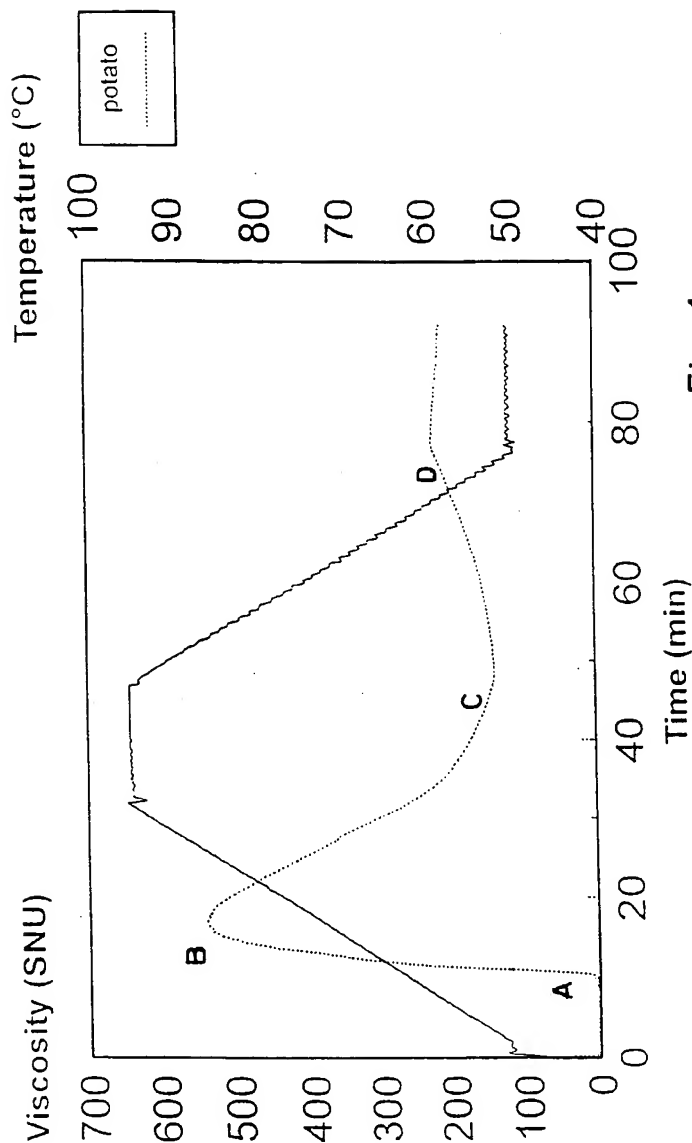


Fig. 1



2/75

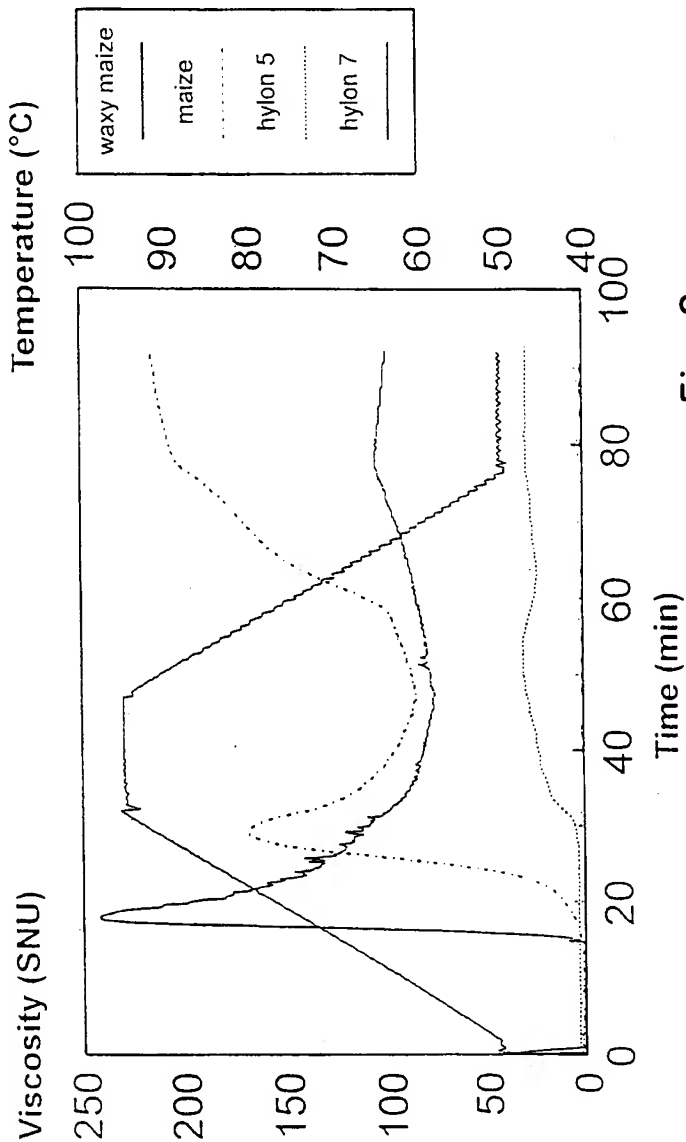


Fig. 2

3/75

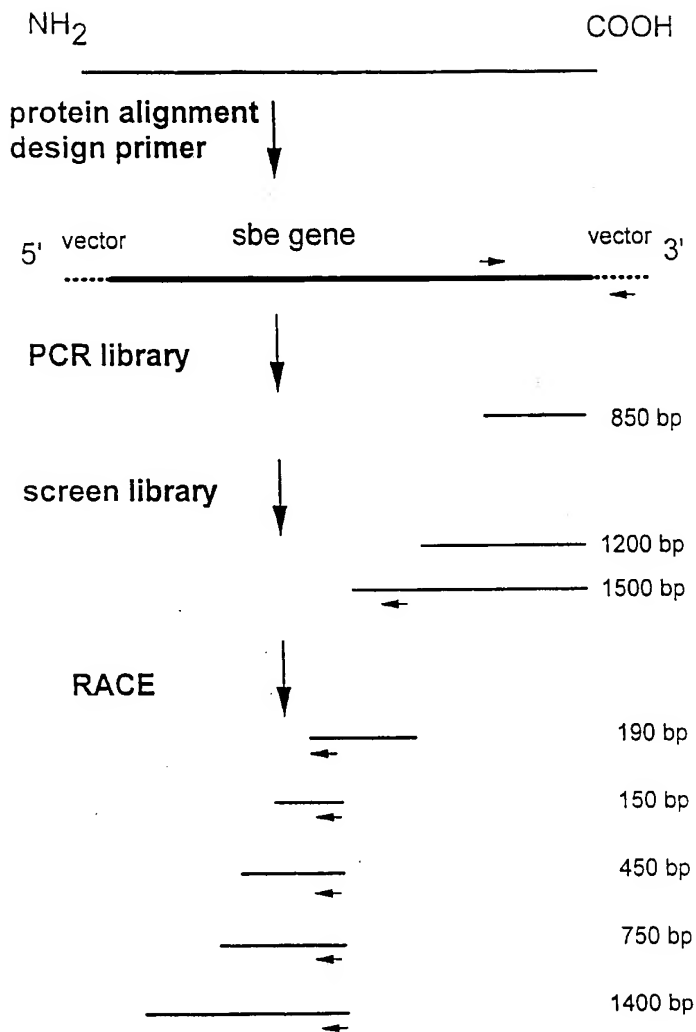


Fig. 3



4/75
Fig.4a
Sheet 2

Majority	P	A	S	P	T	I	D	R	G	I	A	L	H	K	M	I	H	L	I	T	M	G	L	G	G	E	G	Y	L	N	F	M	G	N		
maize 2	P	S	T	P	T	I	D	R	G	I	A	L	H	K	M	I	R	L	I	T	M	G	L	G	G	E	G	Y	L	N	F	M	G	N		
pea 1	P	S	T	P	T	I	D	R	G	I	A	L	H	K	M	I	R	L	I	T	M	G	L	G	G	E	G	Y	L	N	F	M	G	N		
maize 1	P	A	S	P	T	I	D	R	G	I	A	L	H	K	M	I	H	F	I	T	M	A	L	G	G	D	G	Y	L	N	F	M	G	N		
rice 1	P	A	S	P	T	I	N	R	G	I	A	L	H	K	M	I	H	F	I	T	M	A	L	G	G	D	G	Y	L	N	F	M	G	N		
potato1	D	A	S	P	V	V	D	A	G	I	A	L	H	K	M	I	H	F	I	T	M	A	L	G	G	E	G	Y	L	N	F	M	G	N		
human	P	F	T	P	V	I	D	R	G	I	A	L	H	K	M	I	R	L	I	T	M	H	G	L	G	G	E	G	Y	L	N	F	M	G	N	
Majority	F	S	L	G	D	A	D	H	L	R	Y	K	G	M	N	A	F	D	O	A	M	N	A	L	E	E	K	F	S	F	L	A	S	S		
maize 2	F	D	L	G	D	A	D	Y	L	R	Y	H	G	M	O	E	F	D	O	A	M	O	H	L	E	E	K	Y	E	F	M	T	S	D		
pea 1	F	D	L	G	D	A	D	Y	L	R	Y	H	G	M	O	E	F	D	O	A	M	O	H	L	E	E	K	Y	E	F	M	T	S	D		
maize 1	W	S	L	V	D	T	D	H	L	R	Y	K	Y	M	N	A	F	D	O	A	M	N	A	L	E	E	K	Y	E	F	S	F	L	S	S	
rice 1	W	S	L	V	D	T	D	H	L	R	Y	K	Y	M	N	A	F	D	O	A	M	N	A	L	E	E	K	Y	E	F	S	F	L	S	S	
potato1	W	N	L	A	D	S	E	H	L	R	Y	K	F	L	N	A	F	D	R	A	M	N	S	L	D	E	K	Y	E	F	S	F	L	A	S	G
human	F	H	L	T	D	D	L	L	R	Y	K	F	L	N	A	F	D	R	D	R	M	N	R	L	E	E	K	Y	E	F	S	F	L	A	S	P
Majority	K	V	G	C	D	L	P	G	K	Y	K	V	A	L	D	S	D	A	L	V	F	G	G	H	G	R	V	G	H	D	V	D	H	F		
maize 2	R	I	G	C	R	K	P	G	V	Y	K	V	V	L	D	S	D	A	G	L	F	G	G	F	S	R	I	H	A	A	E	H	F			
pea 1	K	V	G	C	L	K	P	G	K	Y	K	I	V	L	D	S	D	A	D	T	L	F	G	G	F	N	R	L	N	H	T	A	E	Y	F	
maize 1	K	V	G	C	D	L	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	G	G	H	G	R	V	G	H	D	V	D	H	F		
rice 1	K	V	G	C	D	L	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	G	G	H	G	R	V	G	H	D	V	D	H	F		
potato1	K	V	G	C	D	L	P	G	K	Y	R	V	A	L	D	S	D	A	L	V	F	G	G	H	G	R	V	G	H	D	V	D	H	F		
human	R	V	G	T	A	L	P	G	K	F	K	I	V	L	D	S	D	A	A	E	Y	G	G	H	Q	R	L	D	H	S	T	D	F	F		

Fig. 4a SHEET 1



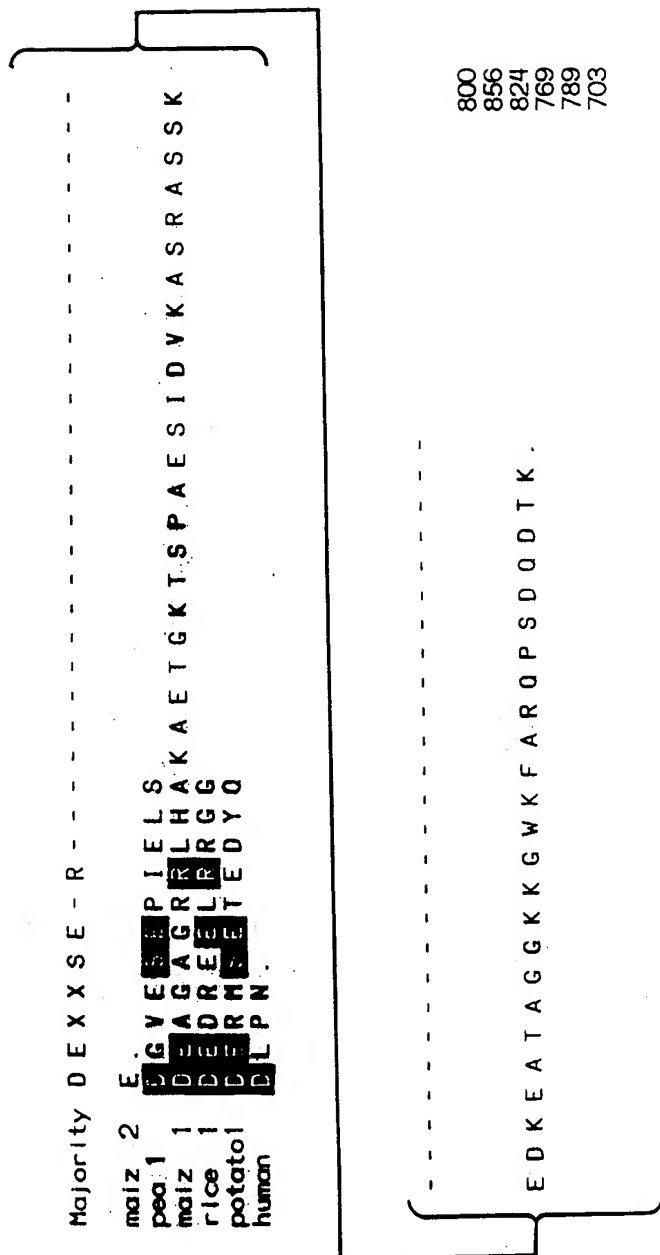
5/75

E F G H P E W I D F P R E - - - - - G N N W S Y D K C R R O	666
E F G H P E W I D F P R R G P Q R L P S G K F I P P	713
E F G H P E W I D F P R E - - - - - G N N N S Y D K C R R R	624
E F G H P E W I D F P R E - - - - - G N N N S Y D K C R R R	618
E F G H P E W I D F P R E - - - - - G N N N S Y D K C R R R	638
E F G H P E W I D F P R K - - - - - G N N E S Y H Y A R R R	566
K Q I V S D K N E G D K V I V F E R G D L V F V F N F H P N N S Y E G Y	
H Q Y I S R K H E E D K V I V F E K G D L V F V F N F H C N N S Y F D Y	736
H Q Y I S R K H E E D R V I I F E R G D L V F V F N F H W T N S Y S D Y	783
K Q I V S D M N D E E K V I V F E R G D L V F V F N F H P K T T Y E G Y	694
K Q I V S D M N D E K V I V F E R G D L V F V F N F H P N K T T Y K G Y	688
K Q I V S D M N D D N K V I V F E R G D L V F V F N F H P N T T Y E G Y	708
Q A Y V S E K H E G N K I I A F E R A G L L F I F N F H P S K S Y T D Y	636
T S P E G - P G V P E T N F N R P N S F K V L S P S R T C V A Y R V	
T A - - - - - D C S H D N R P P Y S F S V Y T P S R T C V V Y A P V	798
T S - - - - - E G W Y D D R P P S F F L V Y A P S R T A V V Y A L A	845
T S P E G V P G V P E T N F N R P P N S F K V L S P P R T C V A Y R V	764
T S P E G M P G V P E T N F N R P P N S F K V L S P P R T C V A Y R V	758
T S P E G I P G V P E T N F N R P P Y S L L V Y I P S R V A L I L Q N V	778
S E - - - - - A F E H N G R P Y S L L V Y I P S R V A L I L Q N V	698

Fig. 4a SHEET 2



6/75



SUBSTITUTE SHEET (RULE 26)

Fig. 4a SHEET 3



7/75

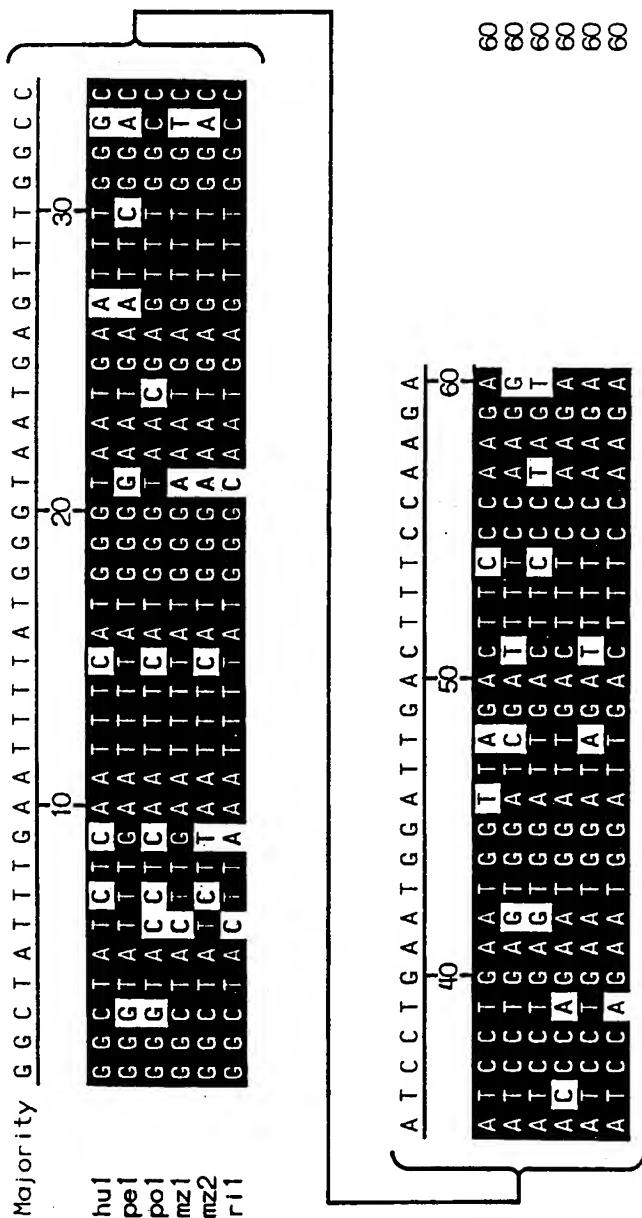


Fig. 4b



8/75

TTGATGGGGCCTTGAACCTCAGCAATTTGACACTCAGTTAGTTACA
 AACTACCCCGGAACCTTGAGTCGTTAAACTGTGAGTCAATCAATGT

AAGGAATGAATAAAAGGATAGATTTGTAAAAACCTAAGGAGAGA
 TTCCTTACTTATTTTCCTATCTAAACATTTTGGGATTCTCTCT

M N K R I D L

GTTCCATCAGTGTACAAATCTAATGGATTGAGCAGTAATGGTGAT
 CAAGGTAGTCACATGTTTAGATTACCTAAGTCGTCATTACCACTA
 V P S V Y K S N G F S S N G D

Bgl II

EcoRI

TCACGGAAGATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATTC
 AGTGCCTTCTAGAACCGACTTTTCAGAAGAATGTTAAGGCTTAAG
 S R K I L A E K S S Y N S E F

ACCCAGAGTGATAGCTCCTCATCCTCAACAGACCAATTTGAGTTC
 TGGGTCTCACTATCGAGGAGTAGGAGTTGTCTGGTTAAACTCAAG
 T Q S D S S S S S T D Q F E F

AGTTCAACAATGGAACACGCTAGCCAGATTAAACTGAGAACGAT
 TCAAGTTGTTACCTTGTGCGATCGGTCTAATTTTGACTCTTGCTA
 S S T M E H A S Q I K T E N D

GATTTTGCTTCATCACTACAACCTACAAGAAGGTGGTAAACTGGAG
 CTAACGAAGTAGTGATGTTGATGTTCTTCCACCATTTGACCTC
 D F A S S L Q L Q E G G K L E

Fig 5
 Sheet 2

Fig. 5 SHEET 1



9/75

Bgl II

CTCCTATCACTTATCAGATCTCTATTTTTTCTCTTAATTCCAACC
GAGGATAGTGAATAGTCTAGAGATAAAAAAGAGAATTAAGGTGG

90

AGAAGAAAGATGGTGTATACACTCTCTGGAGTTCGTTTTCTACT
TCTTCTTTCTACCACATATGTGAGAGACCTCAAGCAAAGGATGA

180

M V Y T L S G V R F P T

CGGAGGAATGCTAATGTTTCTGTATTCTTGAAAAAGCACTCTCTT
GCCTCCTTACGATTACAAAGACATAAGAACTTTTTCTGTGAGAGAA

270

R R N A N V S V F L K K H S L

CGACCTTCTACAGTTGCAGCATCGGGGAAAGTCCTTGTGCCTGGA
GCTGGAAGATGTCAACGTCGTAGCCCCCTTCAGGAACACGGACCT

360

R P S T V A A S G K V L V P G

ACTGAGACATCTCCAGAAAATTCCCCAGCATCAACTGATGTAGAT
TGACTCTGTAGAGGTCTTTTAAGGGGTCGTAGTTGACTACATCTA

450

T E T S P E N S P A S T D V D

GACGTTGAGCCGTCAAGTGATCTTACAGGAAGTGTTGAAGAGCTG
CTGCAACTCGGCAGTTCACTAGAATGTCCTTCACAACTTCTCGAC

540

D V E P S S D L T G S V E E L

GAGTCTAAACATTAAATACTTCTGAAGAGACAATTATTGATGAA
CTCAGATTTTGAATTTATGAAGACTTCTCTGTTAATAACTACTT

630

E S K T L N T S E E T I I D E

Fig 5 SHEET 2



10/75

TCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCTGGACTTGGT
AGACTATCCTAGTCTCTCTCCCCGTAGGGAGGTGGACCTGAACCA
S D R I R E R G I P P P G L G

CACCTTGATTACAGGTATTCACAGTACAAGAACTGAGGGAGGCCA
GTGGAACATAATGTCCATAAGTGTCATGTTCTTTGACTCCCTCCGT
H L D Y R Y S O Y K K L R E A

GAAAAAATGGGTTTCACTCGTAGTGCTACAGGTATCACTTACCGT
CTTTTTTACCCAAAGTGAGCATCACGATGTCCATAGTGAATGGCA
E K M G F T R S A T G I T Y R

AACAATTGGGACGCAAATGCTGACATTATGACTCGGAATGAATTT
TTGTTAACCCTGCGTTTACGACTGTAATACTGAGCCTTACTTAAA
N N W D A N A D I M T R N E F

GCAATTCCTCATGGGTCCAGAGTGAAGATACGTATGGACACTCCA
CGTTAAGGAGTACCCAGGTCTCACTTCTATGCATACCTGTGAGGT
A I P H G S R V K I R M D T P

Fig.5
Sheet4

Fig. 5 SHEET 3



11/75

Hinc II

CAGAAGATTTATGAAATAGACCCCTTTTGACAACTATCGTCAA
GTCTTCTAAATACTTTATCTGGGGGAAAACGTGTTTGATAGCAGTT
O K I Y E I D P L L T N Y R O

ATTGACAAGTATGAGGGTGGTTTGAAGCCTTTTCTCGTGGTTAT
TAACTGTTCACTCCACCAAACCTTCGGAAAAGAGCACCAATA
I D K Y E G G L E A F S R G Y

Pvu II

GAGTGGGCTCTTGGTGCCAGTCAGCTGCCCTCATTGGAGATTTT
CTCACCCGAGAACCACGGGTCAGTCGACGGGAGTAACCTCTAAAG
E W A L G A Q S A A L I G D F

GGTGTCTGGGAGATTTTTCTGCCAAATAATGTGGATGGTTCTCCT
CCACAGACCCTCTAAAAAGACGGTTTATTACACCTACCAAGAGGA
G V W E I F L P N N V D G S P

TCAGGTGTTAAGGATTCCATTCTGCTTGGATCAACTACTCTTTA
AGTCCACAATTCCTAAGGTAAGGACGAACCTAGTTGATGAGAAAT
S G V K D S I P A W I N Y S L

Fig. 5 SHEET 4



12/75

CAGCTTCCTGATGAAATTCATATAATGGAATACATTATGATCCA
GTCGAAGGACTACTTTAAGGTATATTACCTTATGTAATACTAGGT
Q L P D E I P Y N G I H Y D P

CCAAAGTCGCTGAGAATATATGAATCTCATATTGGAATGAGTAGT
GGTTTCAGCGACTCTTATATACTTAGAGTATAACCTTACTCATCA
P K S L R I Y E S H I G M S S

Hind III

CTTCCTCGCATAAAAAAGCTTGGGTACAATGCGCTGCAAATTATG
GAAGGAGCGTATTTTTTCGAACCCATGTTACGCGACGTTTAATAC
L P R I K K L G Y N A L Q I M

ACAAATTTTTTGCACCAAGCAGCCGTTTTGGAACGCCCGACGAC
TGTTTAAAAAACGTGGTTCGTCGGCAAAACCTTGCGGGCTGCTG
T N F F A P S S R F G T P D D

CTCATGGACATTGTTACAGCCATGCATCAAATAATACTTTAGAT
GAGTACCTGTAACAAGTGTCGGTACGTAGTTTATTATGAAATCTA
L M D I V H S H A S N N T L D

Fig.5
Sheet
6

Fig.5 SHEET 5

13/75



CCCGAAGAGGAGAGGTATATCTTCCAACACCCACGGCCAAAGAAA 1170
GGGCTTCTCCTCTCCATATAGAAGGTTGTGGGTGCCGTTTCTTT
P E E E R Y I F Q H P R P K K

CCGGAGCCTAAAATTAAC TCATACGTGAATTTAGAGATGAAGTT
GGCCTCGGATTTTAATTGAGTATGCACTTAAATCTCTACTTCAA 1260
P E P K I N S Y V N F R D E V

GCTATTC AAGAGCATTCTTATTACGCTAGTTTTGGTTATCATGTC 1350
CGATAAGTTCTCGTAAGAATAATGCGATCAAACCAATAGTACAG
A I Q E H S Y Y A S F G Y H V

CTTAAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTGTTGTT 1440
GAATTCAGAACTAACTATTTTCGAGTACTCGATCCTTAACAACAA
L K S L I D K A H E L G I V V

GGACTGAACATGTTTGACTGCACCGATAGTTGTTACTTTCACTCT 1530
CCTGACTTGTACAACTGACGTGGCTATCAACAATGAAAGTGAGA
G L N M F D C T D S C Y F H S

Fig. 5 SHEET 6



14/75

Sac I

GGAGCTCGTGGTTATCATTGGATGTGGGATTCCCGCCTCTTTAAC

CCTCGAGCACCAATAGTAACCTACACCCTAAGGGCGGAGAAATTG

G A R G Y H W M W D S R L F N

TGGTGGTTGGATGCGTTCAAATTTGATGGATTTAGATTTGATGGT

ACCACCAACCTACGCAAGTTTAACTACCTAAATCTAACTACCA

W W L D A F K F D G F R F D G

ACTGGGAACCTACGAGGAATACTTTGGACTCGCAACTGATGTGGAT

TGACCCCTTGATGCTCCTTATGAAACCTGAGCGTTGACTACACCTA

T G N Y E E Y F G L A T D V D

TTCCAGATGCAATTACCATTGGTGAAGATGTTAGCGGAATGCCG

AAGGGTCTACGTTAATGGTAACCACTTCTACAATCGCCTTACGGC

F P D A I T I G E D V S G M P

CGGCTGCATATGGCAATTGCTGATAAACGGATTGAGTTGCTCAAG

GCCGACGTATACCGTTAACGACTATTTGCCTAACTCAACGAGTTC

R L H M A I A D K R I E L L K

ACAAATAGAAGATGGTCGGAAAAGTGTTTTCATACGCTGAAAGT

TGTTTATCTTCTACCAGCCTTTTCACACAAAGTATGCGACTTTCA

T N R R W S E K C V S Y A E S

Fig 5
Sheet 8

Fig. 5 SHEET 7

SUBSTITUTE SHEET (RULE 26)



15/75

TATGGAACTGGGAGGTA CTTAGGTATCTTCTCTCAAATGCGAGA 1620
ATACCTTTGACCCTCCATGAATCCATAGAAGAGAGTTTACGCTCT
Y G N W E V L R Y L L S N A R

GTGACATCAATGATGTATATTCACCACGGATTATCGGTGGGATT C 1710
CACTGTAGTTACTACATATAAGTGGTGCCTAATAGCCACCCTAAG
V T S M M Y I H H G L S V G F

Hinc II

GCTGTTGTGTATCTGATGCTGGTCAACGATCTTATTCATGGGCTT 1800
CGACAACACATAGACTACGACCAGTTGCTAGAATAAGTACCCGAA
A V V Y L M L V N D L I H G L

ACATTTTGTATTTCCCGTCCAAGAGGGGGTGTGGCTTTGACTAT 1890
TGTA AACATAAGGGCAGTTCTCCCCCACAACCGAAACTGATA
T F C I P V Q E G G V G F D Y

AAACGGGATGAGGATTGGAGAGTGGGTGATATTGTTCATACACTG 1980
TTTGGCCTACTCCTAACCTCTCACCCTACTATAACAAGTATGTGAC
K R D E D W R V G D I V H T L

CATGATCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTG 2070
GTACTAGTTCGAGATCAGCCACTATTTTGATATCGTAAGACCGAC
H D Q A L V G D K T I A F W L

Fig. 5 SHEET 8



16/75

Hinc II

ATGGACAAGGATATGTATGATTTTATGGCTCTGGATAGACCGTCA
TACCTGTTCTATACATACTAAAATACCGAGACCTATCTGGCAGT
M D K D M Y D F M A L D R P S

Asp 718
Kpn I

CTTGTAACATATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATG
GAACATTGATACCCTAATCCTCCTCTTCCCATGGATTTAAAGTAC
L V T M G L G G E G Y L N F M

GAACAACACCTCTCTGATGGCTCAGTAATCCCCGGAACCAATTC
CTTGTTGTGGAGAGACTACCGAGTCATTAGGGGCCTTTGGTTAAG
E Q H L S D G S V I P G N Q F

Fig.5
Sheet10

Ssp I

TATTTAAGATACCGTGGGTTGCAAGAATTTGACCGGCCTATGCAG
ATAAATTCTATGGCACCCAACGTTCTTAAACTGGCCGGATACGTC
Y L R Y R G L Q E F D R P M Q

ATATCACGAAAGGATGAAGGAGATAGGATGATTGTATTTGAAAAA
TATAGTGCTTTCCTACTTCCTCTATCCTACTAACATAAACTTTTT
I S R K D E G D R M I V F E K

TCAGACTATCGCATAGCCTGCCTGAAGCCTGGAAAATACAAGGTT
AGTCTGATAGCGTATCGGACGGACTTCGGACCTTTTATGTTCCAA
S D Y R I A C L K P G K Y K V

Fig.5 SHEET 9

SUBSTITUTE SHEET (RULE 26)

17/75



ACATCATTAAATAGATCGTGGGATAGCATTGCACAAGATGATTAGG 2160
TG TAGTAATTATCTAGCACCTATCGTAACGTGTTCTACTAATCC
T S L I D R G I A L H K M I R

EcoRI

GGAAATGAATTCGGCCACCCTGAGTGGATTGATTTCCCTAGGGCT 2250
CCTTTACTTAAGCCGGTGGGACTCACCTAACTAAAGGGATCCCGA
G N E F G H P E W I D F P R A

AGTTATGATAAATGCAGACGGAGATTTGACCTGGGAGATGCAGAA 2340
TCAATACTATTTACGTCTGCCTCTAAACTGGACCCTCTACGTCTT
S Y D K C R R R F D L G D A E

TATCTTGAAGATAAATATGAGTTTATGACTTCAGAACACCAGTTC 2430
ATAGAACTTCTATTTATACTCAAATACTGAAGTCTTGTGGTCAAG
Y L E D K Y E F M T S E H Q F

GGAAACCTAGTTTTTGTCTTTAATTTTCACTGGACAAAAAGCTAT 2520
CCTTTGGATCAAAAACAGAAATTTAAAGTGACCTGTTTTTCGATA
G N L V F V F N F H W T K S Y

GCCTTGGACTCAGATGATCCACTTTTTTGGTGGCTTCGGGAGAATT 2610
CGGAACCTGAGTCTACTAGGTGAAAAACCACCGAAGCCCTCTTAA
A L D S D D P L F G G F G R I

Fig. 5 SHEET 10

SUBSTITUTE SHEET (RULE 26)

18/75



Ssp I

GATCATAATGCCGAATATTTACCTTTGAAGGATGGTATGATGAT

CTAGTATTACGGCTTATAAAGTGGAACCTCCTACCATACTACTA

D H N A E Y F T F E G W Y D D

GTCTATGCACTAGTAGACAAAGAAGAAGAAGAAGAAGAAGAA

CAGATACGTGATCATCTGTTTCTTCTTCTTCTTCTTCTTCTT

V Y A L V D K E E E E E E E E

TGAACGAAC TTGTGATCGCGTTGAAAGATTTGAACGCTACATAGA

ACTTGCTTGAACACTAGCGCAACTTTCTAAACTTGCATGTATCT

Fig 5
Sheet
12

TCATGTGACACAAGGTTTGCAATTCTTCCACTATTAGTAGTGCA

AGTACACTGTGTTCCAAACGTTAAGAAAGGTGATAATCATCACGT

EcoR I

Pst I

GATGAATTTATGTGCAATGCTGGGACGATCGAATTCCTGCAGGCC

CTACTTAAATACAGCTTACGACCCTGCTAGCTTAAGGACGTCCGG

Fig. 5 SHEET 11



19/75

CGTCCTCGTTCAATTATGGTGTATGCACCTTGTA AACAGCAGTG 2700
GCAGGAGCAAGTTAATACCACATACGTGGAACATTTTGTCGTCAC
R P R S I M V Y A P C K T A V

GAAGAAGAAGTAGCAGCAGTAGAAGAAGTAGTAGAGAAGAAGAA 2790
CTTCTTCTTCATCGTCGTCATCTTCTTCATCATCATCTTCTTCTT
E E E V A A V E E V V V E E E

Ssp I

GCTTCTTGACGTATCTGGCAATATTGCATCAGTCTTGCGGAATT 2880
CGAAGAAGTGCATAGACCGTTATAACGTAGTCAGAACCGCCTTAA

Cla I

ACGATATACGCAGAGATGAAGTGCTGAACAAACATATGTAAAATC 2970
TGCTATATGCGTCTCTACTTCACGACTTGTTTGTATACATTTTAG

GGGGGACCCCTTAGTTCT 3033
CCCCCTGGGGAATCAAGA

Fig. 5 SHEET 12

20/75

180 190 200 210 220
 IYEIDPLLTNYROHLDYRYSQYKKLREAIDKYEGGLEAFSRGYEKMFGTR
 : : : DP L Y : H : R : : Y : : I : KYEG LE F : : GY K. GF. R
 LLNLDP TLEPYLDHFRHRMKRYVDQKMLIEKYEGPLEEF AQGYLKFGFNR
 100 110 120 130 140
 230 240 250 260 270
 SATGITYREWALGAQSAALIGDFNNWDANADIMTRNEFGVWEIFLPNNVD
 ... I. YREWA : AQ. A. : IGDFN. W : : : : M : : : FGVW. I : P : VD
 EDGC IYYREWAPAAQAEVIGDFNGWNGSNHMEKQDFGVWSIRIPD-VD
 150 160 170 180 190
 280 290 300 310 320
 GSPAIPHGSRVKIRMDTPSGV-KDSIPAWINYSLOLPDEI--PYNGIHYD
 : . P. IPH. SRVK : R. : : GV D. IPAWI : Y : : : : PY : G : . D
 SKPVIPHNSRVKFRFKHNGVWVDRIPAWIKYATADATKFAAPYDGVYWD
 200 210 220 230 240
 330 340 350 360 370
 PPEEERYIFQHPRPKPKSLRIYESHIGMSSPEPKINSYVNF RDEVLPRI
 PP . ERY F : . PRP KP : : RIYE : H : GMSS : EP : : NSY : F D : VLPRI
 PPPSERYHF KYPRPKPRAPRIYEAHVGMSSSEPRVNSYREFADDVLPRI
 250 260 270 280 290
 380 390 400 410 420
 KKLGYNALQIMAIQEHSSYYASFQYHVTNFFAPSSRFGTPDDLKSLIDKAH
 K . YN : : Q : MAI EHSYY : SFGYHVTNFFA S : R : G : P : DLK LIDKAH
 KANNYNTVOLMAIMEHSYYGSFGYHVTNFFAVSNRYGNPEDLKYLIDKAH
 300 310 320 330 340
 430 440 450 460 470
 ELGI VVLM D I V H S H A S N N T L D G L N M F D C --- T D S C Y F H S G A R G Y H W M W D S
 . LG : VL : D : V H S H A S N N . D G L N F D : : : . Y F H : G : R G Y H : W D S
 S L G L Q V L V D V V H S H A S N N V T D G L N G F D I G Q G S Q E S Y F H A G E R G Y H K L W D S
 350 360 370 380 390
 480 490 500 510 520
 R L F N Y G N W E V L R Y L L S N A R W W L D A F K F D G F R F D G V T S M M Y I H H G L S V G F T
 R L F N Y : N W E V L R : L L S N R W W L : : : F D G F R F D G : T S M : Y : H H G : : G F T
 R L F N Y A N W E V L R F L L S N L R W W L E E Y N F D G F R F D G I T S M L Y V H H G I N M G F T
 400 410 420 430 440
 530 540 550 560 570
 G N Y E E Y F G L A T D V D A V V Y L M L V N D L I H G L F P D A I T I G E D V S G M P T F C I P V
 G N Y : E Y F : A T D V D A V V Y L M L . N : L I H : F P D A . . I : E D V S G M P . . . P V
 G N Y N E Y F S E A T D V D A V V Y L M L A N N L I H K I F P D A T V I A E D V S G M P G L S R P V
 450 460 470 480 490
 580 590 600 610 620
 Q E G G V G F D Y R L H M A I A D K R I E L L K - K R E D E D W R V G D I V H T L N R R W S E K C V
 E G G : G F D Y R L M A I : D K : I : L K K . D E D W . : : : L T N R R : : E K C :
 S E G G I G F D Y R L A M I P D K W I D Y L K N K N E D W S M K E V T S S L T N R R Y T E K C I
 500 510 520 530 540

Fig. 6 SHEET 1

SUBSTITUTE SHEET (RULE 26)



21/75

♣630 ♣640 ♣650 ♣660 ♣670
 SYAESHDOALVGDKTIAFWLMDKMYDFMALDRPSTSLIDRGIALHKMIR
 : YAESHDO: VGDKTIAF LMDK: MY. M: ::::: DRGIALHKMI:
 AYAESHDOQSVGDKTIAFLMDKEMYSGMSCLTDASPVVDRGIALHKMIH
 ♣550 ♣560 ♣570 ♣580 ♣590
 ♣680 ♣690 ♣700 ♣710 ♣720
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 : TM: LGGEGYLNFMGNEFGHPEWIDFPR GN: SYDKC
 FFTMALGGEGYLNFMGNEFGHPEWIDFPR-----EGNNWSYDKC
 ♣600 ♣610 ♣620 ♣630
 ♣730 ♣740 ♣750 ♣760 ♣770
 RRRFDLGDAEYLR YRGLQEFDRPMQYLEDKYEFMTSEHQFISRKDEGDRM
 RR: .: L: D: E. LRY: :. . FDR: M: L: : K: . F: : S. . Q: : S. . D: : : :
 RRQWNLADSEHLRYKFMNAFDRAMNSLDEKFSFLASGKQIVSSMDDONKV
 ♣640 ♣650 ♣660 ♣670 ♣680
 ♣780 ♣790 ♣800 ♣810 ♣820
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 : VFE: G: LVFVFNH .: . Y: : Y: : : C PGKY: VAL: SD. FGG GR
 VVFERGDLV FVFNHHPNNTYEGYKVGCDLPGKYRVALGSDAWFEGGHGRA
 ♣690 ♣700 ♣710 ♣720 ♣730
 ♣830 ♣840 ♣850 ♣860
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 : H: .: . FT E: : : RP. S: . V : P : T V. Y VD. . E.
 GHVDHFTSPEGIPGVPETNFNGRPNSFKVLSPARTCVAYYRVDERMSET
 ♣740 ♣750 ♣760 ♣770 ♣780
 ♣870
 EEEEEEV
 E: : : :
 EDYQTDI
 ♣790

Fig. 6 SHEET 2



22/75

♡10 ♡20 ♡30 ♡40
 M V Y T L S G V R F P T V P S V Y K S N G F S S N G D R R N A N V S V F L K K H -- S L S R K I L A
 M V Y T : S G : R F P : : P S : . K S : . D R R : : S F L K : : S : S R : L
 M V Y T I S G I R F P V L P S L H K S --- T L R C D R R A S S H S F F L K N N S S S F S R T S L Y
 ♡10 ♡20 ♡30 ♡40
 ♡50 ♡60 ♡70 ♡80 ♡90
 E K S S Y N S E F R P S T V A A S G K V L V P G T Q S D S S S S S T D Q F E F T E T S P E N S P A S
 . K S : S E : : S T : A : S : K V L : P : . Q D : S S : D Q : E : . : . : E : . :
 A K F S R D S E T K S S T I A E S D K V L I P E D Q - D N S V S L A D Q L E N P D I T S E D A O N L
 ♡50 ♡60 ♡70 ♡80 ♡90
 ♡100 ♡110 ♡120 ♡130 ♡140
 T D V D S S T M E H A S Q I K T E N D D V E P S S D L T G S V E E L D F A S S L Q L O E G G K L E E
 . D : T M : : : : . : . : . : . : . : . : . : . : S : : : : : . :
 E D L -- T M K D G N K Y N I D - E S T S S Y R E V G D E K G S V T S S S L V D V N T D T Q -- A
 ♡100 ♡110 ♡120 ♡130 ♡140
 ♡150 ♡160 ♡170 ♡180 ♡190
 S K T L N T S E E T I I D E S D R I R E R G I P P P G L G Q K I Y E I D P L L T N Y R O H L D Y R Y
 . K T S : . : . : . : . : I P P P G G Q K I Y E I D P L L . . R O H L D : R Y
 K K T S V H S D K K V K V D K P K I --- I P P P G S G Q K I Y E I D P L L O A H R O H L D F R Y
 ♡150 ♡160 ♡170 ♡180
 ♡200 ♡210 ♡220 ♡230 ♡240
 S Q Y K K L R E A I D K Y E G G L E A F S R G Y E K M G F T R S A T G I T Y R E W A L G A Q S A A L
 : Q Y K : : R E . I D K Y E G G L : A F S R G Y E K . G F T R S A T G I T Y R E W : G A : S A A L
 G Q Y K R I R E E I D K Y E G G L D A F S R G Y E K F G F T R S A T G I T Y R E W G P G A K S A A L
 ♡190 ♡200 ♡210 ♡220 ♡230
 ♡250 ♡260 ♡270 ♡280 ♡290
 I G D F N N W D A N A D I M T R N E F G V W E I F L P N N V D G S P A I P H G S R V K I R M D T P S
 : G D F N N W : : N A D : M T : . . F G V W E I F L P N N . D G S P : I P H G S R V K I : M D T P S
 V G D F N N W N P N A D V M T K D A F G V W E I F L P N N A D G S P P I P H G S R V K I H M D T P S
 ♡240 ♡250 ♡260 ♡270 ♡280
 ♡300 ♡310 ♡320 ♡330 ♡340
 G V K D S I P A W I N Y S L Q L P D E I P Y N G I H Y D P P E E R Y I F O H P R P K K P K S L R I
 G : K D S I P A W I : : S : Q : P : E I P Y N G I . Y D P P E E E : Y : F : H P : P K : P : S : R I
 G I K D S I P A W I K F S V Q A P G E I P Y N G I Y Y D P P E E E K Y V F K H P Q P K R P S I R I
 ♡290 ♡300 ♡310 ♡320 ♡330
 ♡350 ♡360 ♡370 ♡380 ♡390
 Y E S H I G M S S P E P K I N S Y V N F R D E V L P R I K K L G Y N A L Q I M A I Q E H S Y Y A S F
 Y E S H I G M S S P E P K I N : Y . N F R D : V L P R I K K L G Y N A : Q I M A I Q E H S Y Y A S F
 Y E S H I G M S S P E P K I N T Y A N F R D D V L P R I K K L G Y N A V Q I M A I Q E H S Y Y A S F
 ♡340 ♡350 ♡360 ♡370 ♡380
 ♡400 ♡410 ♡420 ♡430 ♡440
 G Y H V T N F F A P S S R F G T P D D L K S L I D K A H E L G I V V L M D I V H S H A S N N T L D G
 G Y H V T N F F A P S S R F G T P : D L K S L I D : A H E L G : : V L M D I V H S H : S N N T L D G
 G Y H V T N F F A P S S R F G T P E D L K S L I D R A H E L G L L V L M D I V H S H S S N N T L D G
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Fig. 7 SHEET 1

SUBSTITUTE SHEET (RULE 26)

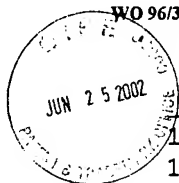


23/75

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 LNMFDGTDGHYFHPGSRGYHWMWDSRFLFNYGSWEVLRYLLSNARWWLDEY
 ↕440 ↕450 ↕460 ↕470 ↕480
 ↕500 ↕510 ↕520 ↕530 ↕540
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 KFDGFRFDGVTSMYTHHGLQVSFTGNYSEYFGLATDVEAVVYMLVNDL
 ↕490 ↕500 ↕510 ↕520 ↕530
 ↕550 ↕560 ↕570 ↕580 ↕590
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 IHGLFP: A: : IGEDVSGMPTFC: P. Q: GG: GF: YRLHMA: ADK: IELKK
 IHGLFPEAVSIGEDVSGMPTFCCLPTQDGGIGFNRYLHMAVADKWIELKK
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 ↕600 ↕610 ↕620 ↕630 ↕640
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 : DEDWR: GDIVHTLTNRRW EKV YAESHQALVGDKT: AFWLMDKDMY
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 DFMALDRPSTPLIDRGIALHKMIRLITMGLGGEGYLNFMGNEFGHPEWID
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 ↕700 ↕710 ↕720 ↕730 ↕740
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 ↕690 ↕700 ↕710 ↕720 ↕730
 ↕750 ↕760 ↕770 ↕780 ↕790
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 LE: . Y. FMTSEHQ: ISRK: EGDR: I: FE: : NLVFNFWHT: SYSY: : :
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 ↕790 ↕800 ↕810 ↕820 ↕830
 ↕850 ↕860 ↕870
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 RTAVVYALADGVESEPIELSDGVES
 ↕840 ↕850 ↕860

Fig. 7 SHEET 2

24/75



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 1 -----TTGA-----
 1 -----GA-----
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 514 CAGCATCAACTGATGT**C**GATAGTTCAACAATGGAACACGC

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 669 TTGGTCAGAAGATTTATGAAATAGACCCCTTTTGACAAA
 754 TTGGTCAGAAGATTTATGAAATAGACCCCTTTTGACAAA

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 791 AAG**C**TTTTCTCGTGGTTATGAAAAATGGGTTTCACTCG
 789 AAGCTTTTTCTCGTGGTTATGAAA**A**AATGGGTTTCACTCG
 874 AAGCTTTTTCTCGTGGTTATGAAAAATGGGTTTCACTCG

Fig.8
Sheet 2

Fig.8 SHEET 1

SUBSTITUTE SHEET (RULE 26)

25/75



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 TGT**A**CTGGAATCCAGAGTGATAGCTCCTCATCCTCAACAGACCAATTTGAG

Fig. 8
Sheet
3

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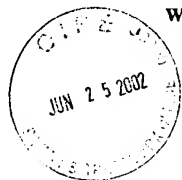
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 TAGTGCTACAGGTATCACTTACCGTGAGTGGGCT**C**TGGTGCCAGTCAGCT
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Fig. 8 SHEET 2

26/75



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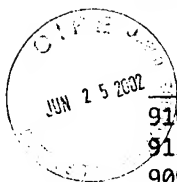
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Fig. 8
SHEET 3

27/75



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Fig. 8
Sheet 5

Fig. 8
SHEET 4

28/75

JUN 25 2002

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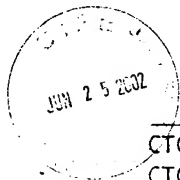
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Fig. 8
 Sheet 6

Fig. 8
 SHEET 5

29/75



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 TTTTTGCACCAAGCAGCCGTTTTGGAACGCCC psbe2con.seq

ACTTTAGATGGACTGAACATGTTTGACGGCACC 11con.seq
 ACTTTAGATGGACTGAACATGTTTGACGGCACC 19con.seq
 ACTTTAGATGGACTGAACATGTTTGACGGCACA 10con.seq
 ACTTTAGATGGACTGAACATGTTTGACGGCACA psbe2con.seq

AGGTATCTTCTCTCAAATGCGAGATGGTGGTTG 11con.seq
 AGGTATCTTCTCTCAAATGCGAGATGGTGGTTG 19con.seq
 AGGTATCTTCTCTCAAATGCGAGATGGTGGTTG 10con.seq
 AGGTATCTTCTCTCAAATGCGAGATGGTGGTTG psbe2con.seq

AACTACGAGGAATACTTTGGACTCGCAACTGAT 11con.seq
 AACTACGAGGAATACTTTGGACTCGCAACTGAT 19con.seq
 AACTACGAGGAATACTTTGGACTCGCAACTGAT 10con.seq
 AACTACGAGGAATACTTTGGACTCGCAACTGAT psbe2con.seq

GGAATGCCGACATTTTGTATTCCCGTTCAAGAT 11con.seq
 GGAATGCCGACATTTTGTATTCCCGTTCAAGAT 19con.seq
 GGAATGCCGACATTTTGTATTCCCGTTCAAGAT 10con.seq
 GGAATGCCGACATTTTGTATTCCCGTTCAAGAT psbe2con.seq

Fig. 8
 SHEET 6

JUN 25 2002

11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100											
10	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

2708 CTAGTAGACAAA**CT**AGAAG-----
2710 CTAGTAGACAAA**GAGAAGAAGAAGAAGAAG**AAGAAGA
2709 CTAGTAGACAAA**GAGAAGAAGAAGAAGAAG**-----
2793 CTAGTAGACAAA**GAGAAGAAGAAGAAGAAG**----

Fig.8
Sheet 8

Fig.8
SHEET 7

31/75

TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA
 TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA
 TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA
 TGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGA

TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC
 TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC
 TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC
 TCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGAC

GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA
 GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA
 GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA
 GATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGGTACCTA

CTCAGTAATCCCAGAAACCAATTCAGTTATGATAAATGCAGACGG
 CTCAGTAATCCCAGAAACCAATTCAGTTATGATAAATGCAGACGG
 CTCAGTAATCCCAGAAACCAATTCAGTTATGATAAATGCAGACGG
 CTCAGTAATCCCAGAAACCAATTCAGTTATGATAAATGCAGACGG

TGAAGATAAATATGAGTTTATGACTTCAGAACACCCAGTTCATATCA
 TGAAGATAAATATGAGTTTATGACTTCAGAACACCCAGTTCATATCA
 TGAAGATAAATATGAGTTTATGACTTCAGAACACCCAGTTCATATCA
 TGAAGATAAATATGAGTTTATGACTTCAGAACACCCAGTTCATATCA

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 AAAAAGCTATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAAA
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 AAAAAGCTATTCAGACTATCGCATAGGCTGCCTGAAGCCTGGAAAA

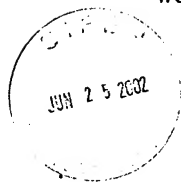
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 CACCTTGAAGGATGGTATGATGATCGTCCTGTTCAATTATGGTG
 CACCTTGAAGGATGGTATGATGATCGTCCTGTTCAATTATGGTG
 CACCTTGAAGGATGGTATGATGATCGTCCTGTTCAATTATGGTG

-----TAGCAGTAGTAGAAGAACTTCTG-----AAGAATGAACG
 AGAAGTAGCAGTAGTAGAAGAGTAGTAGTAGAAGAGAAATGAACG
 -----TAGCAGTAGTAGAAGAGTAGTAGTAGAAGAGAAATGAACG
 -----TAGCAGTAGTAGAAGAGTAGTAGTAGAAGAGAAATGAACG

Fig. 8
 Sheet 9

Fig. 8
 SHEET 8

32/75



GTGGGTGATATTGTTTCATACACTGACAAATAGA 11con.seq
GTGGGTGATATTGTTTCATACACTGACAAATAGA 19con.seq
GTGGGTGATATTGTTTCATACACTGACAAATAGA 10con.seq
GTGGGTGATATTGTTTCATACACTGACAAATAGA psbe2con.seq

AAGGATATGTATGATTTTATGGCTCTGGATAGA 11con.seq
AAGGATATGTATGATTTTATGGCTCTGGATAGA 19con.seq
AAGGATATGTATGATTTTATGGCTCTGGATAGA 10con.seq
AAGGATATGTATGATTTTATGGCTCTGGATAGA psbe2con.seq

AATTCATGGGAAATGAATTCGCCACCCTGAG 11con.seq
AATTCATGGGAAATGAATTCGCCACCCTGAG 19con.seq
AATTCATGGGAAATGAATTCGCCACCCTGAG 10con.seq
AATTCATGGGAAATGAATTCGCCACCCTGAG psbe2con.seq

AGATTTGACCTGGGAGATGCAGAATATTTAAGA 11con.seq
AGATTTGACCTGGGAGATGCAGAATATTTAAGA 19con.seq
AGATTTGACCTGGGAGATGCAGAATATTTAAGA 10con.seq
AGATTTGACCTGGGAGATGCAGAATATTTAAGA psbe2con.seq

CGAAAGGATGAAGGAGATAGGATGATTGTATT 11con.seq
CGAAAGGATGAAGGAGATAGGATGATTGTATT 19con.seq
CGAAAGGATGAAGGAGATAGGATGATTGTATT 10con.seq
CGAAAGGATGAAGGAGATAGGATGATTGTATT psbe2con.seq

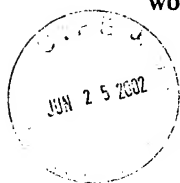
TACAAGGTTCTTGGACTCAGATGATCCACTT 11con.seq
TACAAGGTTGCCTTGGACTCAGATGATCCACTT 19con.seq
TACAAGGTTGCCTTGGACTCAGATGATCCACTT 10con.seq
TACAAGGTTGCCTTGGACTCAGATGATCCACTT psbe2con.seq

TATGCACCTAGTAGAACAGCAGTGGTCTATGCA 11con.seq
TATGCACCTGTAGAACAGCAGTGGTCTATGCA 19con.seq
TATGCACCTAGTAGAACAGCAGTGGTCTATGCA 10con.seq
TATGCACCTAGTAGAACAGCAGTGGTCTATGCA psbe2con.seq

AAC TTGTGATCGCGTTGAAAGATTTGAACGTTA 11con.seq
AAC TTGTGATCGCGTTGAAAGATTTGAACG--- 19con.seq
AAC TTGTGATCGCGTTGAAAGATTTGAACG--- 10con.seq
AAC TTGTGATCGCGTTGAAAGATTTGAACG--- psbe2con.seq

Fig. 8
SHEET 9

33/75



2795 CTTGGTCATCCACATAGAGCTTCTTGAC-----
2827 -----CTACATAGAGCTTCTTGACGTATCTGGCAATAT
2814 -----CCACATAGAGCTTCTTGACGTATCTGGCAATAT
2895 -----CTACATAGAGCTTCTTGACGTATCTGGCAATAT

2898 AGAGATGAAGTGCTGAACAAA--CATATGTAAAATCGATGAA
2937 AGAGATGAAGTGCTGAACAAA--CATATGTAAAATCGATGAA
2924 AGAGATGAAGTGCTGAACAAAACATATGTAAAATCGATGAA
3005 AGAGATGAAGTGCTGAACAAA--CATATGTAAAATCGATGAA

2975
3012
3003
3123 GCCCACTAGAAATCAATTATGTGAGACCTAAAAACAATAAC

Fig. 8
Sheet 11

Fig. 8 SHEET 10

34/75

JUN 25 2002

---ATCAGTCTTGGCGGAATTCCATGTGACAA--AAGGTTTGCACTT
TGCATCAGTCTTGGCGGAATTTTCATGTGACAA--AAGGTTTGCAATT
TGCATTTAGTCTTGGCGGAATTTTCATGTGACAA--AAGGTTTGCAATT
TGCATCAGTCTTGGCGGAATTTTCATGTGACAA--AAGGTTTGCAATT

TTTATGTGCAATGCTGGGACGATCGAATTCCTGCAGCC
TTTATGTGCAATGCTGGGACGATCGAATTCCTGCAG
TTTATGTGCAATGCTGGGACGATCGAATTCCTGCAGCC
TTTATGTGCAATGCTGGGACGGGCTTCAGCAGCTTTTGCTTAGTGA

Fig. 8
Sheet 12

CATAAAATGGAAATAGTGCTGATCTAATGATGTTTTAANCCNNNNA

Fig. 8 SHEET 11

35/75

JUN 25 2002

CTTTCCACTATTAGTAGT**TCAC**CGATATACGC 11con.seq
CTTTCCACTATTAGTAGTGCAACGATATACGC 19con.seq
CTTTCCACTATTAGTAGTGCAACGATATACGC 10con.seq
CTTTCCACTATTAGTAGTGCAACGATATACGC psbe2con.seq

11con.seq
19con.seq
10con.seq
psbe2con.seq

GTTCTGTAAATTGTCATCTCTTANATGTACA

11con.seq
19con.seq
10con.seq
psbe2con.seq

AAAAAAAAAAAAAACTCGAG

Fig. 8 SHEET 12

36/75

JUN 25 2002

GGATGCTAATGTTTCTGTATTCTTGAAAAAGCACTCTCTTTCACGG

CCTACGATTACAAAGACATAAGAACTTTTCGTGAGAGAAAGTGCC

A N V S V F L K K H S L S R

TTCTACAGTTGCAGCATCGGGGAAAGTCCTTGTGCCTGGAAYCCAG

AAGATGTCAACGTCGTAGCCCCCTTCAGGAACACGGACCTTRGGTC

S T V A A S G K V L V P G ? Q

GACATCTCCAGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA

CTGTAGAGGTCTTTTAAGGGGTCGTAGTTGACTACATCTATCAAGT

T S P E N S P A S T D V D S S

TGAGCCGTCAAGTGATCTTACAGGAAGTGTTGAAGAGCTGGATTTT

ACTCGGCAGTTCAGTAGAATGTCCTTCACAACTTCTCGACCTAAAA

E P S S D L T G S V E E L D F

TAAACATTAAATACTTCTGAAGAGACAATTATTGATGAATCTGAT

ATTTTGTAATTTATGAAGACTTCTCTGTTAATACTACTTAGACTA

K T L N T S E E T I I D E S D

Hinc II

GATTTATGAAATAGACCCCCTTTTGACAAACTATCGTCAACACCTT

CTAAATACTTTATCTGGGGGAAAACTGTTTGATAGCAGTTGTGGAA

I Y E I D P L L T N Y R Q H L

Fig.9
Sheet
2

Fig.9 SHEET 1

FIG 2 5 2002

37/75

Bgl II

AAGATCTTGGCTGAAAAGTCTTCTTACAATTCCGAATCCCGACC 90
TTCTAGAACCGACTTTTCAGAAGAATGTTAAGGCTTAGGGCTGG
K I L A E K S S Y N S E S R P

AGTGATAGCTCCTCATCCTCAACAGACCAATTTGAGTTCCTGA 180
TCACTATCGAGGAGTAGGAGTTGTCTGGTTAAACTCAAGTGACT
S D S S S S S T D Q F E F T E

ACAATGGAACACGCTAGCCAGATTAAAACTGAGAACGATGACGT 270
TGTTACCTTGTGCGATCGGTCTAATTTTGACTCTTGCTACTGCA
T M E H A S Q I K T E N D D V

GCTTCATCACTACAACCTACAAGAAGGTGGTAAACTGGAGGAGTC 360
CGAAGTAGTGATGTTGATGTTCTTCCACCATTGACCTCCTCAG
A S S L Q L Q E G G K L E E S

AGGATCAGAGAGAGGGGCATCCCTCCACCTGGACTTGGTCAGAA 450
TCCTAGTCTCTCTCCCCGTAGGGAGGTGGACCTGAACAGTCTT
R I R E R G I P P P G L G Q K

GATTACAGGTATTCACAGTACAAGAACTGAGGGAGGCAATTGA 540
CTAATGTCCATAAGTGTCATGTTCTTTGACTCCCTCCGTAACT
D Y R Y S Q Y K K L R E A I D

Fig. 9 SHEET 2

38/75

Hind III

CAAGTATGAGGGTGGTTTGGGAAGCTTTTTCTCGTGGTTATGAAAAA
GTTCACTACTCCCACCAAACCTTCGAAAAAGAGCACCAATACTTTTT
K Y E G G L E A F S R G Y E K

Pvu II

GGCTCCTGGTGCCAGTCAGCTGCCCTCATTGGAGATTTCACCAAT
CCGAGGACCACGGGTCAGTCGACGGGAGTAACCTCTAAAGTTGTTA
A P G A Q S A A L I G D F N N

CTGGGAGATTTTTCTGCCAAATAATGTGGATGGTTCTCCTGCAATT
GACCCTCTAAAAAGACGGTTTATTACACCTACCAAGAGGACGTTAA
W E I F L P N N V D G S P A I

TGTTAAGGATTCCATTCTCTGCTTGGATCAACTACTCTTTACAGCTT
ACAATTCTAAGGTAAGGACGAACCTAGTTGATGAGAAATGTGCAA
V K D S I P A W I N Y S L Q L

AGAGGAGAGGTATRTCTTCCAACACCCACGGCCAAAGAAACCAAAG
TCTCCTCTCCATAYAGAAGGTTGTGGGTGCCGGTTTCTTTGGTTTC
E E R Y ? F Q H P R P K K P K

Fig.9
Sheet
4

Fig.9 SHEET 3

39/75

JUN 25 2002

ATGGGTTTCACTCGTAGTGCTACAGGTATCACTTACCGTGAGTG 630
TACCCAAAGTGAGCATCACGATGTCCATAGTGAATGGCACTCAC
M G F T R S A T G I T Y R E W

TGGGACGCAAATGCTGACATTATGACTCGGAATGAATTTGGTGT 720
ACCCTGCGTTTACGACTGTAATACTGAGCCTTACTTAAACCACA
W D A N A D I M T R N E F G V

CCTCATGGGTCCAGAGTGAAGATACGYATGGACACTCCATCAGG 810
GGAGTACCCAGGTCTCACTTCTATGCRTACCTGTGAGGTAGTCC
P H G S R V K I R M D T P S G

CCTGATGAAATTCCATATAATGGAATATATTATGATCCACCCGA 900
GGACTACTTTAAGGTATATTACCTTATATAATACTAGGTGGGCT
P D E I P Y N G I Y Y D P P E

TCGCTGAGAATATATGAATCTCATATTGGAATGAGTAGTCCGGA 990
AGCGACTCTTATATACTTAGAGTATAACCTTACTCATCAGGCCT
S L R I Y E S H I G M S S P E

Fig. 9 SHEET 4

40/75



Xmn I

GCCTAAAATTAAC TCATACGTGAATTTAGAGATGAAGTTCTTCCT

CGGATTTTAATTGAGTATGCACTTAAAATCTCTACTTCAAGAAGGA

P K I N S Y V N F R D E V L P

TCAAGAGCATTCTTATTATGCTAGTTTTGGTTATCATGTCACAAAT

AGTTCTCGTAAGAATAATACGATCAAACCAATAGTACAGTGTTTA

Q E H S Y Y A S F G Y H V T N

GTCTTTGATTGATAAAGCTCATGAGCTAGGAATTGTTGTTCTCATG

CAGAACTAACTATTTTCGAGTACTCGATCCTTAACAACAAGAGTAC

S L I D K A H E L G I V V L M

GAACATGTTTGACGGCACAGATAGTTGTTACTTTCACTCTGGAGCT

CTTGTAACAACTGCCGTGTCTATCAACAATGAAAGTGAGACCTCGA

N M F D G T D S C Y F H S G A

AAACTGGGAGGTACTTAGGTATCTTCTCTCAAATGCGAGATGGTGG

TTTGACCCTCCATGAATCCATAGAAGAGAGTTTACGCTCTACCACC

N W E V L R Y L L S N A R W W

ATCAATGATGTATACTCACCACGGATTATCGGTGGGATTCACTGGG

TAGTTACTACATATGAGTGGTGCCTAATAGCCACCCTAAGTGACCC

S M M Y T H H G L S V G F T G

Fig.9
Sheet
6

Fig.9 SHEET 5

SUBSTITUTE SHEET (RULE 26)

41/75

JUN 25 2002

CGCATAAAAAASCTTGGGTACAATGCGGTGCAAATTATGGCTAT 1080
GCGTATTTTTTSGAACCCATGTTACGCCACGTTTAATACCGATA
R I K ? L G Y N A V Q I M A I

TTTTTGCACCAAGCAGCCGTTTTGGAACGCCCGACGACCTTAA 1170
AAAAAACGTGGTTCGTCGGCAAAACCTTGGGGCTGCTGGAATT
F F A P S S R F G T P D D L K

GACATTGTTACAGCCATGCATCAAATAATACTTTAGATGGACT 1260
CTGTAACAAGTGTCGGTACGTAGTTTATTATGAAATCTACCTGA
D I V H S H A S N N T L D G L

Sac I

CGTGGTTATCATTGGATGTGGGATTCCCGCCTCTTTAACTATGG 1350
GCACCAATAGTAACCTACACCCTAAGGGCGGAGAAATTGATACC
R G Y H W M W D S R L F N Y G

TTGGATGAGTTCAAATTTGATGGATTTAGATTTGATGGTGTGAC 1440
AACCTACTCAAGTTTAAACTACCTAAATCTAAACTACCACTG
L D E F K F D G F R F D G V T

AACTACGAGGAATACTTTGGACTCGCAACTGATGTGGATGCTGT 1530
TTGATGCTCCTTATGAAACCTGAGCGTTGACTACACCTACGACA
N Y E E Y F G L A T D V D A V

Fig. 9 SHEET 6

42/75

Hinc II

TGTGTATCTGATGCTGGTCAACGATCTTATTCACGGGCTTTTCCCA

ACACATAGACTACGACCAGTTGCTAGAATAAGTGCCCGAAAAGGGT

V Y L M L V N D L I H G L F P

TTGTATTCCCGTTCAAGATGGGGGTGTTGGCTTTGACTATCGGCTG

AACATAAGGGCAAGTTCTACCCCCACAACCGAAACTGATAGCCGAC

C I P V Q D G G V G F D Y R L

GGATGAGGATTGGAGAGTGGGTGATATTGTTTCATACACTGACAAAT

CCTACTCCTAACCTCTCACCCTACTATAACAAGTATGTGACTGTTTA

D E D W R V G D I V H T L T N

TCAAGCTCTAGTCGGTGATAAACTATAGCATYCTGGCTGATGGAC

AGTTTCGAGATCAGCCACTATTTTGATATCGTARGACCGACTACCTG

Q A L V G D K T I A ? W L M D

ATTAATAGATCGTGGGATAGCATTGCACAAGATGATTAGGCTTGTA

TAATTATCTAGCACCTATCGTAACGTGTTCTACTAATCCGAACAT

L I D R G I A L H K M I R L V

Fig.9
Sheet
8

Fig. 9 SHEET 7

43/75

JUN 25 2002

GATGCAATTACCATTGGTGAAGATGTTAGCGGAATGCCGACATT 1620
CTACGTTAATGGTAACCACTTCTACAATCGCCTTACGGCTGTAA
D A I T I G E D V S G M P T F

Nde I

CATATGGCAATTGCTGATAAATGGATTGAGTTGCTCAAGAAACG 1710
GTATACCGTTAACGACTATTTACCTAACTCAACGAGTTCTTTGC
H M A I A D K W I E L L K K R

AGAAGATGGTCGGAAAAGTGTTTTCATMCGCTGAAAGTCATGA 1800
TCTTCTACCAGCCTTTTTCACACAAAGTAKGCGACTTTCAGTACT
R R W S E K C V S ? A E S H D

Hinc II

AAGGATATGTATGATTTTATGGCTCTGGATAGACCGTCAACATC 1890
TTCCTATACATACTAAAATACCGAGACCTATCTGGCAGTTGTAG
K D M Y D F M A L D R P S T S

Asp 718

Kpn I

ACTATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATGGGAAA 1980
TGATACCCTAATCCTCCTCTTCCCATGGATTTAAAGTACCCTTT
T M G L G G E G Y L N F M G N

Fig. 9 SHEET 8

44/75

EcoRI

TGAATTCGGCCACCCTGAGTGGATTGATTTCCCTAGGGCTGARCAA
ACTTAAGCCGGTGGGACTCACCTAACTAAAGGGATCCCGACTYGT
E F G H P E W I D F P R A E Q

Ssp I

TGATAATGCAGACGGAGATTTGACCTGGGAGATGCAGAATATTTA
ACTATTTACGTCTGCCTCTAACTGGACCCTCTACGTCTTATAAAT
D K C R R R F D L G D A E Y L

TGAAGATAAATATGAGTTTATGACTTCAGAACACCAGTTCATATCA
ACTTCTATTTATACTCAAATACTGAAGTCTTGTGGTCAAGTATAGT
E D K Y E F M T S E H Q F I S

CCTAGTTTTTGTCTTTAATTTTCACTGGACAAATAGCTATTTCAGAC
GGATCAAAAACAGAAATTAAGTACCTGTTTATCGATAAGTCTG
L V F V F N F H W T N S Y S D

GGACTCAGATGATCCACTTTTTGGTGGCTTCGGGAGAATTGATCAT
CCTGAGTCTACTAGGTGAAAAACCACCGAAGCCCTCTTAAGTAGTA
D S D D P L F G G F G R I D H

YCGYYCAATTATGGTGTATGCACCTAGTAGAACAGCAGTGGTCTAT
RGCRRGTTAATACCACATACGTGGATCATCTTGTCTGTCACCAGATA
R ? I M V Y A P S R T A V V Y

NGAAGAATTTT

NCTTCTAAAA

E E F

2531

Fig 9 SHEET 9

SUBSTITUTE SHEET (RULE 26)

Fig 9
Sheet
10

45/75

JUN 25 2002

CACCTCTCTGATGGCTCAGTAATTCCCGGAAACCAATTCAGTTA
GTGGAGAGACTACCGAGTCATTAAGGGCCTTTGGTTAAGTCAAT 2070
H L S D G S V I P G N Q F S Y

Nco I

AGATACCATGGGTTGCAAGAATTTGACCGGGCTATGCAGTATCT
TCTATGGTACCCAACGTTCTTAACTGGCCCGATACGTCATAGA 2160
R Y H G L Q E F D R A M Q Y L

CGAAAGGATGAAGGAGATAGGATGATTGTATTTGAAARAGGAAA
GCTTTCCTACTTCCTCTATCCTACTAACATAAACTTTTCCTTT 2250
R K D E G D R M I V F E ? G N

TATCGCATAGGCTGCCTGAAGCCTGGAAAATACAAGGTTGGCTT
ATAGCGTATCCGACGGACTTCGGACCTTTTATGTTCCAACCGAA 2340
Y R I G C L K P G K Y K V G L

Ssp I

AATGCCGAATATTTACCTCTGAAGGATCGTATGATGATCGYCC
TTACGGCTTATAAAGTGGAGACTTCCTAGCATACTACTAGCRGG 2430
N A E Y F T S E G S Y D D R P

GCACTAGTAGACAAANTAGAAGNAGAAGAAGAAGAANCCGN
CGTGATCATCTGTTNATCTTCNTCTTCTTCTTCTTCTTNGGCN 2520
A L V D K ? E ? E E E E E ? ?

Fig. 9 SHEET 10

SUBSTITUTE SHEET (RULE 26)

46/75

JUN 25 2002

	10	20	30
1	-GATGGG	CCTTGA	ACTCAGCAATTTGACACTCAGT
1	TTGATGGG	-CCTTGA	ACTCAGCAATTTGACACTCAGT
1	TTGATGGG	CCTTGA	ACTCAGCAATTTGACACTCAGT
1	T		
1			
	80	90	100
69	TTTTTCTCTTAATTCCAACCAAGG	-AATGAATAAAAA	
70	TTTTTCTCTTAATTCCAACCAAGG	GAATGAATAAAAG	
71	TTTTTCTCTTAATTCCAACCAAGG	-AATGAATAAAAG	
7			AAGAG
1			
	150	160	170
138	GAAAGATGGTGTATACACTCTCTGGAGTTCGTTTTCC		
140	GAAAGATGGTGTATAT	ACTCTCTGGAGTTCGTTTTCC	
140	GAAAGATGGTGTATACACTCTCTGGAGTTCGTTTTCC		
33			TCT
1			
	220	230	240
208	CAGCAGTAATGGTGATCGGAGGAATGCTAAT	ATTTCT	
210	CAGCAGTAATGGTGATCGGAGGAATGCTAATGTTTCT		
210	CAGCAGTAATGGTGATCGGAGGAATGCTAATGTTTCT		
48	CA		
1		GGATGCTAATGTTTCT	
	290	300	310 *
278	ATCTTGGCTGAAAAGTCTTCTTACAATTCGGAAT	CCC	
280	ATCTTGGCTGAAAAGTCTTCTTACAATTCGGAATTC		
280	ATCTTGGCTGAAAAGTCTTCTTACAATTCGGAATTC		
57	ATCTTGGCTGAAAAGTCTTCTTACAATTCGGAATTC		
50	ATCTTGGCTGAAAAGTCTTCTTACAATTCGGAAT	CCC	

Fig.10
Sheet 2

Fig. 10 SHEET 1

47/75

40	50	60	70	
TAGTTACACT	CC	ATCACTTATCAGATCTCTAT	10con. seq	
TAGTTACACT	CC	ATCACTTATCAGATCTCTAT	11con. seq	
TAGTTACACT	CC	ATCACTTATCAGATCTCTAT	19con. seq	
-----	CATT	A-----	86CON. SEQ	
-----	-----	-----	pcrsbe2con. seq	
110	120	130	140	
GATAGATTTGTAAAAACCCTAAGGAGAGAAGAA	10con. seq			
GATAGATTTGTAAAAACCCTAAGGAGAGAAGAA	11con. seq			
GATAGATTTGTAAAAACCCTAAGGAGAGAAGAA	19con. seq			
GAGAAATT	-----	AAC	TATCAGAGGA	86CON. SEQ
-----	-----	-----	-----	pcrsbe2con. seq
180	190	200	210	
TACTGTTCCATCAGTGTACAAATCTAATGGATT	10con. seq			
TACTGTTCCATCAGTGTACAAATCTAATGGATT	11con. seq			
TACTGTTCCATCAGTGTACAAATCTAATGGATT	19con. seq			
CACCAT	-----	CACCA	-----	86CON. SEQ
-----	-----	-----	-----	pcrsbe2con. seq
250	260	270	280	
GTATTCTTGAAAAA	CACTCTCTTT	CACGGAAG	10con. seq	
GTATTCTTGAAAAA	CACTCTCTTT	CACGGAAG	11con. seq	
GTATTCTTGAAAAA	CACTCTCTTT	CACGGAAG	19con. seq	
-----	-----	CCATGG	-----	86CON. SEQ
GTATTCTTGAAAAA	CACTCTCTTT	CACGGAAG	pcrsbe2con. seq	
320	330	340	350	
GACCTTCTACAA	ATTGCAGCATCGGGGAAAGTCC	10con. seq		
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	11con. seq			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	19con. seq			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	86CON. SEQ			
GACCTTCTACAGTTGCAGCATCGGGGAAAGTCC	pcrsbe2con. seq			

Fig. 10 SHEET 2

48/75

JUN 25 2002

	360	370	380
348	TTGTGCCTGGAATCCAGAGTGATAGCTCCTCATCCTC		
350	TTGTGCCTGGAACCCAGAGTGATAGCTCCTCATCCTC		
350	TTGTGCCTGGAACCCAGAGTGATAGCTCCTCATCCTC		
127	TTGTGCCTGGAACCCAGAGTGATAGCTCCTCATCCTC		
120	TTGTGCCTGGAATCCAGAGTGATAGCTCCTCATCCTC		
	430	440	450
418	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
420	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
420	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
197	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
190	AGAAAATTCCCCAGCATCAACTGATGTAGATAGTTCA		
	500	510	520
488	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
490	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
490	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
267	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
260	AACGATGACGTTGAGCCGTCAAGTGATCTTACAGGAA		
	570	580	590
558	AACTACAAGAAGGTGGTAAACTGGAGGAGTCTAAAC		
560	AACTACAAGAAGGTGGTAAACTGGAGGAGTCTAAAC		
560	AACTACAAGAAGGTGGTAAACTGGAGGAGTCTAAAC		
337	AACTACAAGAAGGTGGTAAACTGGAGGAGTCTAAAC		
330	AACTACAAGAAGGTGGTAAACTGGAGGAGTCTAAAC		
	640	650	660
628	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
630	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
630	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
407	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		
400	ATCTGATAGGATCAGAGAGAGGGGCATCCCTCCACCT		

Fig.10
Sheet 4

Fig.10 SHEET 3

49/75

JUN 25 2002

390 400 410 420
AACAGATCAATTTGAGTTCCTGAGACATCTCC 10con. seq
AACAGACCAATTTGAGTTCACTGAGACATCTCC 11con. seq
AACAGACCAATTTGAGTTCACTGAGACATCTCC 19con. seq
AACAAACCAATTTGAGTTCACTGAGACATCTCC 86CON. SEQ
AACAGACCAATTTGAGTTCACTGAGACATCTCC pcrsbe2con. seq

460 470 480 490
ACAATGGAACACGCTAGCCAGATTAAAACTGAG 10con. seq
ACAATGGAACACGCTAGCCAGATTAAAACTGAG 11con. seq
ACAATGGAACACGCTAGCCAGATTAAAACTGAG 19con. seq
ACAATGGAACACGCTAGCCAGATTAAAACTGAG 86CON. SEQ
ACAATGGAACACGCTAGCCAGATTAAAACTGAG pcrsbe2con. seq

530 540 550 560
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC 10con. seq
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC 11con. seq
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC 19con. seq
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC 86CON. SEQ
GTGTTGAAGAGCTGGATTTTGCTTCATCACTAC pcrsbe2con. seq

600 610 620 630
ATTAAATACTTCTGAAGAGACAATTATTGATGA 10con. seq
ATTAAATACTTCTGAAGAGACAATTATTGATGA 11con. seq
ATTAAATACTTCTGAAGAGACAATTATTGATGA 19con. seq
ATTAAATACTTCTGAAGAGACAATTATTGATGA 86CON. SEQ
ATTAAATACTTCTGAAGAGACAATTATTGATGA pcrsbe2con. seq

670 680 690 700
GGACTTGGTCAGAAGATTTATGAAATAGACCCC 10con. seq
GGACTTGGTCAGAAGATTTATGAAATAGACCCC 11con. seq
GGACTTGGTCAGAAGATTTATGAAATAGACCCC 19con. seq
GGACTTGGTCAGAAGATTTATGAAATAGACCCC 86CON. SEQ
GGACTTGGTCAGAAGATTTATGAAATAGACCCC pcrsbe2con. seq

Fig.10 SHEET 4

JUN 25 2002

50/75

	710	720	730
698	CTTTTGACAACTATCGTCAACACCTTGATTACAGGT		
700	CTTTTGACAACTATCGTCAACACCTTGATTACAGGT		
700	CTTTTGACAACTATCGTCAACACCTTGATTACAGGT		
477	CTTTTGACAACTATCGTCAACACCTTGATTACAGGT		
470	CTTTTGACAACTATCGTCAACACCTTGATTACAGGT		
	780	790	800
768	ACAAGTATGAGGGTGGTTTGAAGCTTTTCTCGTGG		
770	ACAAGTATGAGGGTGGTTTGAAGCTTTTCTCGTGG		
770	ACAAGTATGAGGGTGGTTTGAAGCTTTTCTCGTGG		
547	ACAAGTATGAGGGTGGTTTGAAGCTTTTCTCGTGG		
540	ACAAGTATGAGGGTGGTTTGAAGCTTTTCTCGTGG		
	850	860	870
838	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCAG		
839	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCAG		
840	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCAG		
617	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCAG		
610	AGGTATCACTTACCGTGAGTGGGCTCCTGGTGCCAG		
	920	930	940
908	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
909	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
910	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
687	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
680	GACGCAAATGCTGACATTATGACTCGGAATGAATTTG		
	990	1000	1010
978	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
979	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
980	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
757	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		
750	ATGGTTCTCCTGCAATTCCTCATGGGTCCAGAGTGAA		

Fig.10
Sheet 6

Fig.10 SHEET 5

51/75

JUN 25 2002

740	750	760	770	
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				10con. seq
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				11con. seq
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				19con. seq
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				86CON. SEQ
ATTCACAGTACAAGAACTGAGGGAGGCAATTG				pcrsbe2con. seq
810	820	830	840	
TTATGAAA C AATGGGTTTCACTCGTAGTGCTAC				10con. seq
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				11con. seq
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				19con. seq
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				86CON. SEQ
TTATGAAAAAATGGGTTTCACTCGTAGTGCTAC				pcrsbe2con. seq
880	890	900	910	
TCAGCTGCCCTCATTGG G GATTTCACAATTGG				10con. seq
TCAGCTGCCCTCATTGGAGATTTCACAATTGG				11con. seq
TCAGCTGCCCTCATTGGAGATTTCACAATTGG				19con. seq
TCAGCTGCCCTCATTGGAGATTTCACAATTGG				86CON. SEQ
TCAGCTGCCCTCATTGGAGATTTCACAATTGG				pcrsbe2con. seq
950	960	970	980	
GTGTCTG A GAGATTTTTCTGCCAAATAATGTGG				10con. seq
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				11con. seq
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				19con. seq
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				86CON. SEQ
GTGTCTGGGAGATTTTTCTGCCAAATAATGTGG				pcrsbe2con. seq
1020	1030	1040	1050	
GATACGTATGGACACTCCATCAGGTGTTAAGGA				10con. seq
GATACGTATGGACACTCCATCAGGTGTTAAGGA				11con. seq
GATACGTATGGACACTCCATCAGGTGTTAAGGA				19con. seq
GATACGTATGGACACTCCATCAGGTGTTAAGGA				86CON. SEQ
GATACG T ATGGACACTCCATCAGGTGTTAAGGA				pcrsbe2con. seq

Fig. 10 SHEET 6

JUN 25 2002

52/75

	1060	1070	1080
1048	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
1049	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
1050	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
827	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		
820	TTCCATTCTGCTTGGATCAACTACTCTTTACAGCTT		

	1130	1140	1150
1118	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
1119	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
1120	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
895	GATCCACCCGAAGAGGAGAGGTATATCTTCCAACACC		
890	GATCCACCCGAAGAGGAGAGGTATCTTCCAACACC		

	1200	1210	1220
1188	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
1189	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
1190	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
965	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		
960	ATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAA		

Fig.10
Sheet 8

	1270	1280	1290	*
1258	TCTTCCTCGCATAAAAAAAGCTTGGGTACAATGCGCT			
1259	TCTTCCTCGCATAAAAAA-GCTTGGGTACAATGCGCT			
1260	TCTTCCTCGCATAAAAAA-GCTTGGGTACAATGCGCT			
1035	TCTTCCTCGCATAAAAAA-GCTTGGGTACAATGCGCT			
1030	TCTTCCTCGCATAAAAAA-SCTTGGGTACAATGCGCT			

	1340	1350	1360
1328	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTGCA		
1328	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTGCA		
1329	GCTAGTTTTGGTTATCATGTCACAAATTTTTTTGCA		
1104	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTGCA		
1099	TGCTAGTTTTGGTTATCATGTCACAAATTTTTTTGCA		

Fig.10 SHEET 7

JUN 25 2002

53/75

1090	1100	1110	1120	
CCTGATGAAATTCCATATAATGGAATATATTAT				10con. seq
CCTGATGAAATTCCATATAATGGAATATATTAT				11con. seq
CCTGATGAAATTCCATATAATGGAATATATTAT				19con. seq
CCTGATGAAATTCCATATAATGGAATATATTAT				86CON. SEQ
CCTGATGAAATTCCATATAATGGAATATATTAT				pcrsbe2con. seq

1160	1170	1180	1190	
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				10con. seq
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				11con. seq
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				19con. seq
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				86CON. SEQ
CACGGCCAAAGAAACCAAAGTCGCTGAGAATAT				pcrsbe2con. seq

1230	1240	1250	1260	
AATTAACTCATACGTGAATTTTAGAGATGAAGT				10con. seq
AATTAACTCATACGTGAATTTTAGAGATGAAGT				11con. seq
AATTAACTCATACGTGAATTTTAGAGATGAAGT				19con. seq
AATTAACTCATACGTGAATTTTAGAGATGAAGT				86CON. SEQ
AATTAACTCATACGTGAATTTTAGAGATGAAGT				pcrsbe2con. seq

1300	1310	1320	1330	
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				10con. seq
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				11con. seq
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				19con. seq
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				86CON. SEQ
GCAAATTATGGCTATTCAAGAGCATTCTTATTA				pcrsbe2con. seq

1370	1380	1390	1400	
CCAAGCAGCCGTTTTGGAACGCCGACGACCTT				10con. seq
CCAAGCAGCCGTTTTGGAACGCCGACGACCTT				11con. seq
CCAAGCAGCCGTTTTGGAACGCCGACGACCTT				19con. seq
CCAAGCAGCCGTTTTGGAACGCCGACGACCTT				86CON. SEQ
CCAAGCAGCCGTTTTGGAACGCCGACGACCTT				pcrsbe2con. seq

Fig. 10 SHEET 8

JUN 25 2002

54/75

	1410	1420	1430
1398	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1398	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1399	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1174	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
1169	AAGTCTTTGATTGATAAAGCTCATGAGCTAGGAATTG		
	1480	1490	1500
1468	CAAATAAATACTTTAGATGGACTGAACATGTTTGACGG		
1468	CAAATAAATACTTTAGATGGACTGAACATGTTTGACGG		
1469	CAAATAAATACTTTAGATGGACTGAACATGTTTGACGG		
1244	CAAATAAATACTTTAGATGGACTGAACATGTTTGACGG		
1239	CAAATAAATACTTTAGATGGACTGAACATGTTTGACGG		
	1550	1560	1570
1538	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1538	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1539	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1314	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
1309	TGGTTATCATTGGATGTGGGATTCCGCCTCTTTAAC		
	1620	1630	1640
1608	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1607	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1609	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1384	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
1379	TCAAATGCGAGATGGTGGTTGGATGAGTTCAAATTTG		
	1690	1700	1710
1678	TGTACTACCAACCGGATTATCGGTGGGATTCACTGG		
1677	TGTACTACCAACCGGATTATCGGTGGGATTCACTGG		
1679	TGTATACTACCAACCGGATTATCGGTGGGATTCACTGG		
1454	TGTATACTACCAACCGGATTATCGGTGGGATTCACTGG		
1449	TGTATACTACCAACCGGATTATCGGTGGGATTCACTGG		

Fig.10
Sheet 10

Fig.10 SHEET 9

55/75

JUN 25 2002

1440	1450	1460	1470	
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	10con. seq		
TTGTTCTCATGGACAT	GTTTCACAGCCATGCAT	11con. seq		
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	19con. seq		
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	86CON. SEQ		
TTGTTCTCATGGACATTGTT	CACAGCCATGCAT	pcrsbe2con. seq		
1510	1520	1530	1540	
CACAGATAGTTGTTACTTT	CACTCTGGAGCTCG	10con. seq		
CACCGATAGTTGTTACTTT	CACTCTGGAGCTCG	11con. seq		
CACCGATAGTTGTTACTTT	CACTCTGGAGCTCG	19con. seq		
CACCGATAGTTGTTACTTT	CACTCTGGAGCTCG	86CON. SEQ		
CACAGATAGTTGTTACTTT	CACTCTGGAGCTCG	pcrsbe2con. seq		
1580	1590	1600	1610	
TATGGAAACTGGGAGGTACT	TAGGTATCTTCTC	10con. seq		
TATGGAAACTGGGAGGTACT	TAGGTATCTTCTC	11con. seq		
TATGGAAACTGGGAGGTACT	TAGGTATCTTCTC	19con. seq		
TATGGAAACTGGGAGGTACT	TAGGTATCTTCTC	86CON. SEQ		
TATGGAAACTGGGAGGTACT	TAGGTATCTTCTC	pcrsbe2con. seq		
1650	1660	1670	1680	
ATGGATTTAGATTTGATGGT	GTGACATCAATGA	10con. seq		
ATGGATTTAGATTGATGGT	GTGACATCAATGA	11con. seq		
ATGGATTTAGATTTGATGGT	GTGACATCAATGA	19con. seq		
ATGGATTTAGATTTGATGGT	GTGACATCAATGA	86CON. SEQ		
ATGGATTTAGATTTGATGGT	GTGACATCAATGA	pcrsbe2con. seq		
1720	1730	1740	1750	
GAACTACGAGGAATACTTT	GGACTCGCAACTGA	10con. seq		
GAACTACGAGGAATACTTT	GGACTCGCAACTGA	11con. seq		
GAACTACGAGGAATACTTT	GGACTCGCAACTGA	19con. seq		
GAACTACGAGGAATACTTT	GGACTCGCAACTGA	86CON. SEQ		
GAACTACGAGGAATACTTT	GGACTCGCAACTGA	pcrsbe2con. seq		

Fig. 10 SHEET 10

JUN 25 2002

56/75

	1760	1770	1780
1748	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1747	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1749	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1524	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
1519	TGTGGATGCTGTTGTGTATCTGATGCTGGTCAACGAT		
	1830	1840	1850
1818	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1817	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1819	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1594	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
1589	ATTGGTGAAGATGTTAGCGGAATGCCGACATTTTGTG		
	1900	1910	1920
1888	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1887	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1889	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1664	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
1659	ATCGGCTGCATATGGCAATTGCTGATAAATGGATTGA		
	1970	1980	1990
1958	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1957	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1959	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1734	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
1729	GGGTGATATTGTTTCATACACTGACAAATAGAAGATGG		
	2040	2050	2060
2028	GATCAAGCTCTAGTCGGTGATAAACTATAGCATTCT		
2027	GATCAAGCTCTAGTCGGTGATAAACTATAGCATTCT		
2029	GATCAAGCTCTAGTCGGTGATAAACTATAGCATTCT		
1804	GATCAAGCTCTAGTCGGTGATAAACTATAGCATTCT		
1799	GATCAAGCTCTAGTCGGTGATAAACTATAGCATTCT		

Fig.10
Sheet 12

Fig. 10 SHEET 11

57/75

JUN 25 2002

1790	1800	1810	1820	
CTTATTCATGGGCTTTTCCCAGATGCAATTACC				10con. seq
CTTATTCATAGGCTTTTCCCAGATGCAATTACC				11con. seq
CTTATTCATGGGCTTTTCCCAGATGCAATTACC				19con. seq
CTTATTCATGGGCTTTTCCCAGATGCAATTACC				86CON. SEQ
CTTATTCACGGGCTTTTCCCAGATGCAATTACC				pcrsbe2con. seq
1860	1870	1880	1890	
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT				10con. seq
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT				11con. seq
TTCCCGTCAAGAGGGGGGTGTTGGCTTTGACT				19con. seq
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT				86CON. SEQ
TTCCCGTTCAAGATGGGGGTGTTGGCTTTGACT				pcrsbe2con. seq
1930	1940	1950	1960	
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT				10con. seq
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT				11con. seq
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT				19con. seq
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT				86CON. SEQ
GTTGCTCAAGAAACGGGATGAGGATTGGAGAGT				pcrsbe2con. seq
2000	2010	2020	2030	
TCGGAAAAGTGTTTTCATACGCTGAAAGTCAT				10con. seq
TCGGAAAAGTGTTTTCATACGCTGAAAGTCAT				11con. seq
TCGGAAAAGTGTTTTCATACGCTGAAAGTCAT				19con. seq
TCGGAAAAGTGTTTTCATACGCTGAAAGTCAT				86CON. SEQ
TCGGAAAAGTGTTTTCATACGCTGAAAGTCAT				pcrsbe2con. seq
2070	2080	2090	2100	
GGCTGATGGACAAGGATATGTATGATTTTATGG				10con. seq
GGCTGATGGACAAGGATATGTATGATTTTATGG				11con. seq
GGCTGATGGACAAGGATATGTATGATTTTATGG				19con. seq
GGCTGATGGACAAGGATATGTATGATTTTATGG				86CON. SEQ
GGCTGATGGACAAGGATATGTATGATTTTATGG				pcrsbe2con. seq

Fig. 10 SHEET 12

JUN 25 2002

58/75

	2110	*	2120	2130
2098	CTCTGGATAGACCGTCAACATCATTAAATAGATCGTGG			
2097	CTCTGGATAGACCGTCAACATCATTAAATAGATCGTGG			
2099	CTCTGGATAGACCGTCAACATCATTAAATAGATCGTGG			
1874	CTCTGGATAGACCGTCAACATCATTAAATAGATCGTGG			
1869	CTCTGGATAGACCGTCAACATCATTAAATAGATCGTGG			
	2180		2190	2200
2168	TATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATG			
2167	TATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATG			
2169	TATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATG			
1944	TATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATG			
1939	TATGGGATTAGGAGGAGAAGGGTACCTAAATTTTCATG			
	2250	*	2260	2270
2238	TTCCCTAGGGCTGAACAACACCTCTCTGATGGCTCAG			
2237	TTCCCTAGGGCTGAACAACACCTCTCTGATGGCTCAG			
2239	TTCCCTAGGGCTGAACAACACCTCTCTGATGGCTCAG			
2014	TTCCCTAGGGCTGAACAACACCTCTCTGATGGCTCAG			
2009	TTCCCTAGGGCTGAACAACACCTCTCTGATGGCTCAG			
	2320		2330	2340
2308	GCAGACGGAGATTTGACCTGGGAGATGCAGAAATATTT			
2307	GCAGACGGAGATTTGACCTGGGAGATGCAGAAATATTT			
2309	GCAGACGGAGATTTGACCTGGGAGATGCAGAAATATTT			
2084	GCAGACGGAGATTTGACCTGGGAGATGCAGAAATATTT			
2079	GCAGACGGAGATTTGACCTGGGAGATGCAGAAATATTT			
	2390		2400	2410
2378	TATGCAGTATCTTGAAGATAAATATGAGTTTATGACT			
2377	TATGCAGTATCTTGAAGATAAATATGAGTTTATGACT			
2379	TATGCAGTATCTTGAAGATAAATATGAGTTTATGACT			
2154	TATGCAGTATCTTGAAGATAAATATGAGTTTATGACT			
2149	TATGCAGTATCTTGAAGATAAATATGAGTTTATGACT			

Fig.10
Sheet 14

Fig.10 SHEET 13

59/75

JUN 25 2002

2140	2150	2160	2170	
GATAGCATT	A	CACAAGATGATTAGGCTTGTAAC		10con. seq
GATAGCATT	G	CACAAGATGATTAGGCTTGTAAC		11con. seq
GATAGCATT	G	CACAAGATGATTAGGCTTGTAAC		19con. seq
GATAGCATT	G	CACAAGATGATTAGGCTTGTAAC		86CON. SEQ
GATAGCATT	G	CACAAGATGATTAGGCTTGTAAC		pcrsbe2con. seq

2210	2220	2230	2240	
GGAAATGAATTCGGCCACCCTGAGTGGATTGAT				10con. seq
GGAAATGAATTCGGCCACCCTGAGTGGATTGAT				11con. seq
GGAAATGAATTCGGCCACCCTGAGTGGATTGAT				19con. seq
GGAAATGAATTCGGCCACCCTGAGTGGATTGAT				86CON. SEQ
GGAAATGAATTCGGCCACCCTGAGTGGATTGAT				pcrsbe2con. seq

2280	2290	2300	2310	
TAATTTCCC	A	GAAACCAATTCAGTTATGATAAAT		10con. seq
TAATTTCCCG	A	GAAACCAATTCAGTTATGATAAAT		11con. seq
TAATTTCCCG	A	GAAACCAATTCAGTTATGATAAAT		19con. seq
TAATTTCCCG	A	GAAACCAATTCAGTTATGATAAAT		86CON. SEQ
TAATTTCCCG	A	GAAACCAATTCAGTTATGATAAAT		pcrsbe2con. seq

2350	2360	2370	2380	
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				10con. seq
AAGATACCA	T	GGGTTGCAAGAATTTGAC	TGGGC	11con. seq
AAGATACCGTGGGTTGCAAGAATTTGACCGGC				19con. seq
AAGATACCGTGGGTTGCAAGAATTTGACCGGGC				86CON. SEQ
AAGATACCA	T	GGGTTGCAAGAATTTGACCGGGC		pcrsbe2con. seq

2420	2430	2440	2450	
TCAGAACACCAGTTCATATCACGAAAGGATGAA				10con. seq
TCAGAACACCAGTTCATATCACGAAAGGATGAA				11con. seq
TCAGAACACCAGTTCATATCACGAAAGGATGAA				19con. seq
TCAGAACACCAGTTCATATCACGAAAGGATGAA				86CON. SEQ
TCAGAACACCAGTTCATATCACGAAAGGATGAA				pcrsbe2con. seq

Fig. 10 SHEET 14

60/75

* 2480

2530 2540 2550

2600 2610 2620

2670 2680 ~~2690~~

2740 2750 2760

Fig. 10 SHEET 15

JUN 25 2002

61/75

2490	2500	2510	*	2520	
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					10con. seq
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					11con. seq
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					19con. seq
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					86CON. SEQ
TTTTTGTCTTTAATTTTCACTGGACAAAAGCT					pcrsbe2con. seq
2560	2570	2580	*	2590	
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					10con. seq
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					11con. seq
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					19con. seq
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					86CON. SEQ
ATACAAGGTTGCCTTGGACTCAGATGATCCACT					pcrsbe2con. seq
2630	*	2640	*	2650	2660
TATTTACCTTTGAAGGATGGTATGATGATCGT					10con. seq
TATTTACCTTTGAAGGATGGTATGATGATCGT					11con. seq
TATTTACCTTTGAAGGATGGTATGATGATCGT					19con. seq
TATTTACCTTTGAAGGATGGTATGATGATCGT					86CON. SEQ
TATTTACCTTTGAAGGATGGTATGATGATCGT					pcrsbe2con. seq
2700	2710	2720		2730	
CAGTGGTCTATGCACTAGTAGACAAAG---					10con. seq
CAGTGGTCTATGCACTAGTAGACAAAGCT---					11con. seq
CAGTGGTCTATGCACTAGTAGACAAAGAAGAAG					19con. seq
CAGTGGTCTATGCACTAGTAGACAAAG---AAG					86CON. SEQ
CAGTGGTCTATGCACTAGTAGACAAANTAGAAG					pcrsbe2con. seq
2770	2780	2790		2800	
AGAAGAAGTAGTAGTAGAAGAAGAATGAACGAA					10con. seq
AGAAGAA CCCATTC -----AAGAATGAACGAA					11con. seq
AGAAGAAGTAGTAGTAGAAGAAGAATGAACGAA					19con. seq
AGAAGAAGTAGTAGTAGAAGAAGAATGAACGAA					86CON. SEQ
-----CCGNNGAAGAAT-----					pcrsbe2con. seq

Fig. 10 SHEET 16

JUN 25 2002

62/75

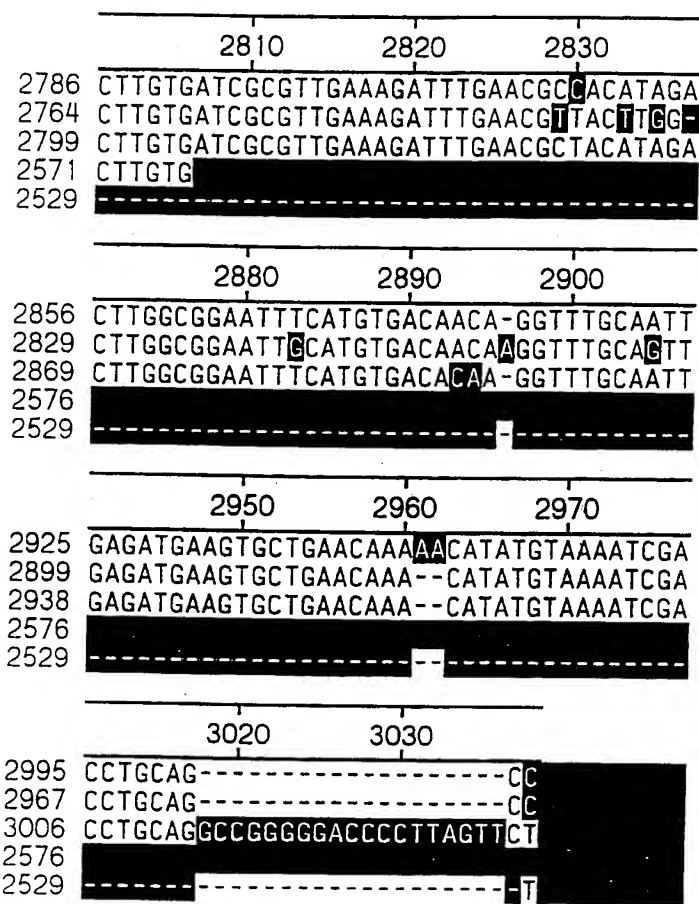
Fig.10
Sheet 18

Fig. 10 SHEET 17

JUN 25 2002

63/75

2840	2850	2860	2870	
GCTTCTTGACGTATCTGGCAATATTGCAT	TAGT	10con. seq		
--TCATCCACATA--GAGCTTCTTGACATCAGT		11con. seq		
GCTTCTTGACGTATCTGGCAATATTGCATCAGT		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		
2910	2920	2930	2940	
CTTTCCACTATTAGTAGTGCAACGATATACGCA		10con. seq		
CTTTCCACTATTAGTAGTGCAACGATATACGCA		11con. seq		
CTTTCCACTATTAGTAGTGCAACGATATACGCA		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		
2980	2990	3000	3010	
TGAATTTATGTGCAATGCTGGGACGATCGAATT		10con. seq		
TGAATTTATGTGCAATGCTGGGACGATCGAATT		11con. seq		
TGAATTTATGTGCAATGCTGGGACGATCGAATT		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		
		10con. seq		
		11con. seq		
		19con. seq		
		86CON. SEQ		
		pcrsbe2con. seq		

Fig. 10 SHEET 18

JUN 25 2002

64/75

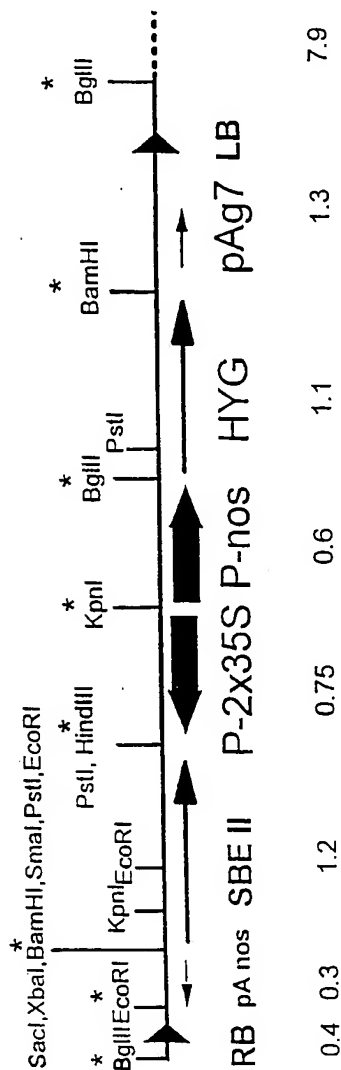
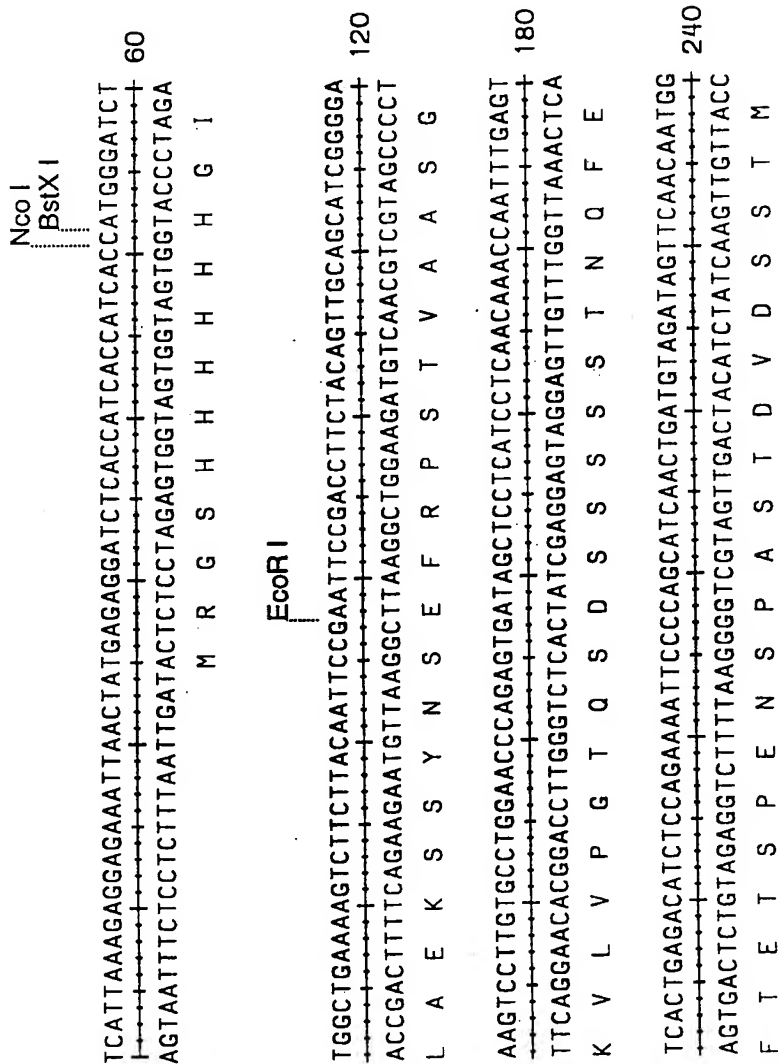


Fig. 11

65/75

Fig.12
SHEET 1

66/75

Fig. 12
SHEET 2

AACACGCTAGCCAGATTAAACATGAGAACGATGACGTTGAGCCGTCAAGTGAICTTACAG 300
TTGTGGGATCGGTCTAATTTTGACTCTTGCTACTGCAACTCGGCAGTTCACCTAGAAATGTC
E H A S Q I K T E N D D V E P S S D L T

GAAGTGTGAAGAGCTGGATTTTGGCTTTCATCACTACAACCTACAAGAAAGGTGGTAAACTGG 360
CTTCACAACTTCTCGACCTAAACGAAGTAGTGTGATGTTCTTCCACCATTTTGACC
G S V E E L D F A S S L Q L Q E G G K L

AGGAGTCTAAACATTAAATACTTCTGAAGAGAGACAATTATTGATGAATCTGATAGGATCA 420
TCCTCAGATTTTGTAAATTAAGAAGACTTCTCTGTTAATAACTACTTAGACTATCCTAGT
E E S K T L N T S E E T I I D E S D R I

GAGAGAGGGGCATCCCTCCACCCTGGACTTGGTCAGAAGATTTATGAATAGACCCCTTT 480
CTCTCTCCCCGTAGGGAGGTGGACCTGAACCACTCTTCTAATACTTTATCTGGGGGAAA
R E R G I P P G L G Q K I Y E I D P L

Hinc II

TGACAAACIATCGTCAACACCTTGATTACAGGTATTCACAGTACAAGAAACTGAGGGAGG 540
ACTGTTTGATAGCAGTTGTGGAACCTAATGTCCTAAGTGCATGTTCTTTGACTCCCTCC
L T N Y R Q H L D Y R Y S Q Y K K L R E

JUN 25 2002

67/75

Fig 12
SHEET 3

Hind III

CAATTGACAAGTATGAGGGTGGTTTGGAGGCTTTTTCGIGGTTATGAAAAATGGGTT 600
 GTTAACTGTTCATACTCCACCAACCTTCGAAAAAGAGCACCATACTTTTTTACCCAA
 A I D K Y E G G L E A F S R G Y E K M G

Pvu II

TCACTCGTAGTGCTACAGGTATCAGTTACCGTGAGTGGGCTCCTGGTGCCAGTCAGCTG 660
 AGTGAGCATCAGGATGTCCATAGTGAATGGCACTCACCCGAGGACCACGGGTCAGTCGAC
 F T R S A T G I T Y R E W A P G A Q S A

CCCTCATTGGAGATTCAACAATTGGGACGCAAAATGCTGACATTATGACTCGGAATGAAT 720
 GGGAGTAACCTCTAAAGTTGTTAACCTGCGTTTACGACTGTAACTAGAGCCTTACTTA
 A L I G D F N N W D A N A D I M T R N E

TTGGTGCTGGGAGATTTTTCGCCAAATAATGTGGATGGTTCTCCTGCAATTCCTCATG 780
 AACACAGACCCCTCTAAAAAGACGGTTTATTACACCTACCAAGAGGACGTTAAGGAGTAC
 F G V W E I F L P N N V D G S P A I P H

JUN 25 2002

68/75

SnaBI

GGTCCAGAGTGAAGATACGTAIGGACACATCCATCAGGTGTTAAGGATTCATTCGCTT 840

CCAGGTCACATCTATGCATACCTGTGAGGTAGTCCACAATTCCTAAGGTAAGGACGAA

G S R V K I R M D T P S G V K D S I P A

GGATCAACTACICTTCACAGCTTCCTGATGAAATTCATATAATGGAATATATTAIGATC 900

CCTAGTTGATGAGAAGTGTCGAAGGACTACTTTAAGGTATATTACCTTATATAATACTAG

W I N Y S S Q L P D E I P Y N G I Y Y D

CACCCGAAGAGGAGGTATATCTTCCAACACCCACGGCCAAAGAAACCAAGTCGCTGA 960

GTGGGCTTCTCCTCTCCATATAGAAGGTTGTGGGTGCCGGTTCTTTGGTTTCAGCGACT

P P E E E R Y I F Q H P R P K K P K S L

GAATATGAATCTCATATTGGAATGAGTAGTCCGGAGCCTAAAAATTAACATACGTGA 1020

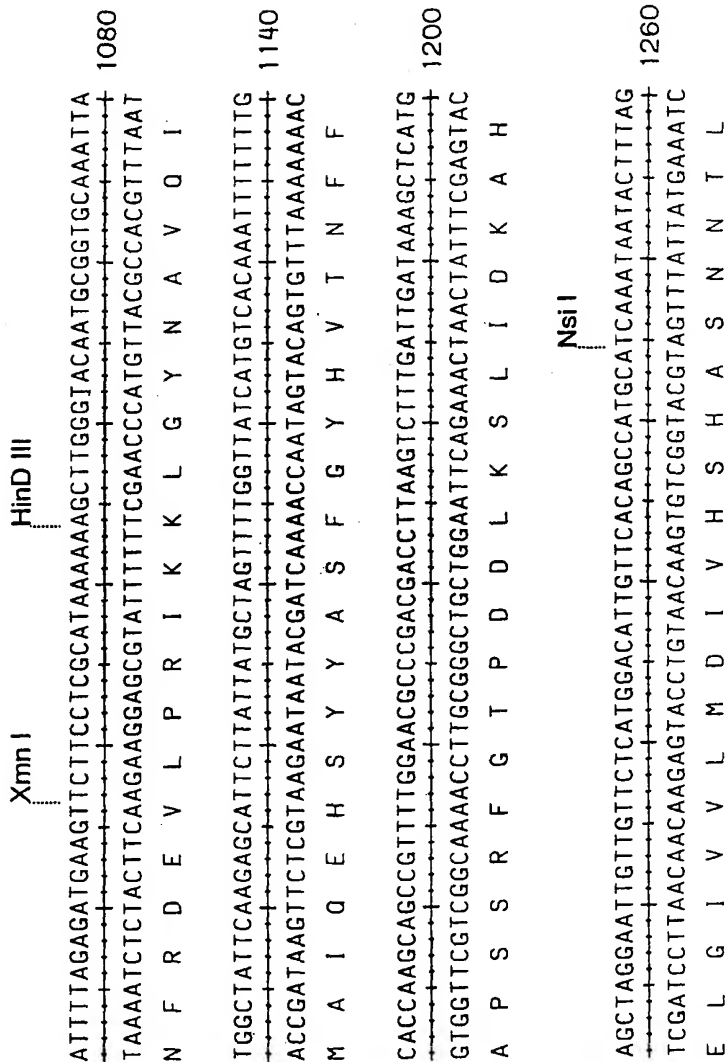
CTTATATACTTAGAGTATAACCTTACTCATCATCAGGCCTCGGATTTTAATTGAGTATGCAC

R I Y E S H I G M S S P E P K I N S Y V

Fig. 12
SHEET 4

JUN 25 2002

69/75

Fig. 12
SHEET 5

2002 5 22

70/75

Sac I

ATGGACTGAACATGTTTGACGGCACCAGATAGTTGTTACTTTTCACTCTGGAGCTCGTGGTT
TACCTGACTTGTACAAACTGCCGTGGCTATCAACAATGAAAGTGAGACCTCGAGCACCAA
D G L N M F D G T D S C Y F H S G A R G 1320

ATCATTGGATGTTGGATTCCCGCCTTTTTAACTATGGAACCTGGGAGGTACTTAGGTATC
TAGTAACCTACACCCCTAAGGGCGGAAAAATTGATACCTTTGACCCCTCCATGAATCCATAG
Y H W M W D S R L F N Y G N W E V L R Y 1380

TTCTCTCAAATGCGAGATGGTGGTGGATGAGTTCAAATTTGATGGATTTAGATTTGATG
AAGAGATTTACGCTCTACCAACCACTACTCAAGTTTAAACTACCTAAATCTAAACTAC
L L S N A R W W L D E F K F D G F R F D 1440

GTGTGACATCAATGATGTATACTCACCACGGATTATCGGTGGGATTCACTGGGAACCTACG
CACACTGTAGTTACTACATATGATGGTGGCTAATAGCCACCCCTAAGTGACCCCTTGATGC
G V T S M M Y T H H G L S V G F T G N Y 1500

Fig. 12
SHEET 6

JUL 25 2002

71/75

Hinc II

AGGAATACCTTGGACTCGCAACTGATGIGGATGCTGTTGIGTAICIGATGCTGGTCAACG 1560

TCCTTATGAAACCTGAGCGTTGACTACACCTACGACAACACATAGACTACGACCAGTTGC
E E Y F G L A T D V D A V V Y L M L V N

ATCTTATTCATGGGCTTTCCAGATGCAATTACCATTTGGTGAAGAIGTTAGCGGAATGC 1620

TAGAATAAGTACCCGAAAGGCTACGTTAATGGTAACCACTTCTACAATCGCCTTACG
D L I H G L F P D A I T I G E D V S G M

CGACATTTTGTATTCCTCGTTCAAGATGGGGGTGTTGGCTTTGACTATCGGCTGCATATGG 1680

GCTGTAAACATAAGGGCAAGTTCTACCCCCACACCGAACTGATAGCCGACGTATACC
P T F C I P V Q D G G V G F D Y R L H M

CAATTGCTGATAAATGGATTGAGTTGCTCAAGAAACGGGATGAGGATTGGAGAGTGGGTG 1740

GTTAACGACTATTTACCTAACTCAACGAGTTCTTTGCCCTACTCTAACCTCTCACCCAC
A I A D K W I E L L K K R D E D W R V G

ATATTGTTCACTACACTGACAAATAGAAGATGGTCGGAAAAGTGTGTTTCATACGCTGAAA 1800

TATAACAAGTATGTGACTGTTTATCTTCTACCAGCCTTTTCACACAAAGTATCGGACTTT
D I V H T L T N R R W S E K C V S Y A E

Fig 12
SHEET 7

JUL 25 2002

72/75

Fig 12
SHEET 8

GTCATGATCAAGCTCTAGTCGGTGATAAACTATAGCATTCTGGCTGATGGACAAGGATA 1860
 CAGTACTAGTTCGAGATCAGCCACTATTTTGATATCGTAAGACCGACTACCTGTTCCTAT
 S H D Q A L V G D K T I A F W L M D K D

TGTATGATTTTATGGCTCTGGATAGACCGCCAACATCATTAAATAGATCGTGGGATAGCAT 1920
 ACATACTAAATAACCGAGACCTATCTGGCGTTGTAGTAATTATCTAGCACCCCTATCGIA
 M Y D F M A L D R P P T S L I D R G I A

Asp 718

Kpn I

TGCACAAGATGATTAGGCTTGTAACCTATGGGATTAGGAGGAGAAGGTACCTAAATTTC 1980
 ACGTGTCTACTAATCCGAACATTGATACCCCTAATCCTCCTCTCCCATGGATTAAAGT
 L H K M I R L V T M G L G G E G Y L N F

EcoRI

TGGGAAATGAATTCGGCCACCCCTGAGTGGATTGATTTCCTAGGGCTGAACAACACCTCT 2040
 ACCCTTACTTAAGCCGGTGGGACTCACCTAACAATAAGGGATCCCGACTTGTGTGGAGA
 M G N E F G H P E W I D F P R A E Q H L

JUN 25 2002

73/75

Fig. 12
SHEET 9

CTGATGACTCAGTAATCCCGGAAACCAATTCAGTTATGATAAATGCAGACGGAGATTG 2100
 GACTACTGAGTCATTAAGGGCCCTTGGTTAAGTCAATACTATTACGTCCTGCTCTAAAC
 S D D S V I P G N Q F S Y D K C R R F

Ssp I

ACCTGGGAGATGCAGAAATATTTAAGATACCGTGGGTGCAAGAAATTTGACCGGGCTATGC 2160
 TGGACCCCTCAGCTTATAAATTTCTATGGCACCCCAACGTTCTTAAACTGGCCCCGATACG
 D L G D A E Y L R Y R G L Q E F D R A M

AGTATCTTGAAGATAAATATGAGTTTATGACTTCAGAACACCAGTTCATATCACGAAAGG 2220
 TCATAGAACTTCTATTATACTCAAAATACTGAAGCTTGGTCAAGTATAGTCTTTC
 Q Y L E D K Y E F M T S E H Q F I S R K

ATGAAGGAGATAGGATGATTGTATTGAAAAAGGAAACCTAGTTTTGTCTTTAAATTTT 2280
 TACTTCCCTCTATCCTACTAACATAAACITTTTCCCTTGGATCAAAAACAGAAATTTAAAG
 D E G D R M I V F E K G N L V F V F N F

ACTGGACAAAAAGCTATTCAGACTATCGCATAGGCTGCGCTGAAGCCTGGAAAAATACAAGG 2340
 TGACCTGTTTTTCGATAAGCTCGATAGCGTATCCGACGGACTTCGGACCTTTTAIGTTC
 H W T K S Y S D Y R I G C L K P G K Y K

SUBSTITUTE SHEET (RULE 26)

TTATAAGTGGAAACTTCCTACCATACTACTAGCAGGAGCAAGTTAATACCACATACGTG
E Y F T F E G W Y D D R P R S I M V Y A

CTTGTAGAACAGCAGTGGTCTATGCACCTAGTAGACAAAGAAGAAGAAGAAG
 GAACAATCTGTGTCACCAAGATACGATCATCTGTTCTTCTTCTTCTTCTTCTC
 P C R T A V V Y A L V D K E E E E E E

AAGAAGAAGTAGCAGTAGTAGAAGAAGTAGTAGAAGAAGAATGAACGAACTTGTG
 TTTCTTCTCATCGTCATCATCTTCTTCATCATCATCTTCTTCTTCTTCTTGAACAC
 E E E V A V V E E V V E E E

Fig 12
SHEET 10

JUN 25 2002

75/75

